
Full Circle
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ISSUE #210 - October 2024
BOOK REVIEW
20 YEARS
Ubuntu
UBUNTU 24.10
20 YEARS OF UBUNTU
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Issue #210

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Editorial

Welcome to the latest issue of Full Circle

This month, we bring you Latex and Inkscape. Last month was the last part of Stable Diffusion, and it was, it turned out, the last (for now) of Python and Micro This. Greg is taking a well earned break. I mean, he's not had a month off in years. Honestly, years. So, if you have a series of articles you'd like to run, now is your chance: *ronnie@fullcirclemagazine.org*.

Filling the space formerly known as Stable Diffusion, we have an interesting piece on using a USB stick in a router to become a shared drive of sorts. Quite ingenious!

Adam is, of course, reviewing Ubuntu 24.10 this month. Not only is it a new release, and the last of 2024, but also celebrating 20 years of Ubuntu. Crazy! Ubuntu must have been only about 4 years old when I started Full Circle. Oh how time flies!

Remember: the Full Circle Weekly News is available on Spotify and YouTube. The more upvotes and reviews you give it on those platforms the more exposure we get.

Don't forget: we have a Table of Contents which lists every article from every issue of FCM. Huge thanks to Paul Romano for maintaining: *https://goo.gl/tpOKqm* and, if you're looking for some help, advice, or just a chinwag: remember that we have a Telegram group: *https://t.me/joinchat/24ec1oMFO1ZjZDc0*. I hope to see you there. Come and say hello.

All the best! Ronnie *ronnie@fullcirclemagazine.org*



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NEWS

Submitted by ErikTheUnread

Full Circle Weekly News





http://fullcirclemagazine.org/feed/podcast

http://www.stitcher.com/s?fid=85347&refid=stpr

http://tunein.com/radio/Full-Circle-Weekly-News-p855064/

https://player.fm/series/the-full-circle-weekly-news

Week 39

First release of Wolvic browser edition with Chromium engine:

23/09/2024

The Wolvic Chromium 1.0 browser has been released, which uses the Chromium engine instead of the Mozilla Gecko engine and Firefox technologies. The Wolvic browser (formerly Firefox Reality) is designed for use in augmented and virtual reality systems, provides a 3D interface for navigating sites using a 3D headset and in addition to traditional flat pages, allows web developers to create three-dimensional web applications for virtual reality systems using the WebXR, WebAR and WebVR APIs.

Navigation in the browser interface is done using VR controllers or eye tracking, and data entry in web forms is done using a virtual keyboard or a voice input system that allows you to fill out forms and send search queries using the speech recognition engine being developed in Mozilla. You can view spatial videos in the browser, filmed in 360-degree mode.

Ready-made builds are generated for the Android platform and support 3D headsets like Huawei VR Glass, Huawei Vision Glass, VIVE Focus, Lynx R1, Lenovo A3, Magic Leap 2, Meta Quest 2/3/Pro, Oculus Quest and Pico 4/4E. In testing mode, you can run on a regular Android smartphone without a 3D accessory.

https://wolvic.com/blog/chromium_release_1.0/

MPV Video Player Release 0.39:

23/09/2024

After five months of development, the open source video player MPV 0.39 has been released, forked from the MPlayer2 project codebase in 2013. MPV focuses on developing new features, without worrying about maintaining compatibility with

MPlayer. MPV code is licensed under LGPLv2.1+, some parts remain under GPLv2, but the transition to LGPL is almost complete and the "--enable-lgpl" option can be used to disable the remaining GPL code.

https://github.com/mpv-player/mpv/releases/tag/v0.39.0

A console Live build of CentOS Stream MIN:

24/09/2024

The developers of the CentOS distribution have presented a new build "MIN", a bootable Live-environment CentOS Stream build, working only in console mode. To install the loaded system on the disk, the utility "install_to_hard_drive" is offered, providing a text interface. The size of the build is 1.2 GB. In addition to MIN, the project also forms Live-builds of Cinnamon, GNOME, KDE, MATE, Xfce and MAX (a collection of different graphical environments).

https://blog.centos.org/2024/09/september-2024-news/

OpenWrt 23.05.5:

25/09/2024

An update to the OpenWrt 23.05.5 distribution has been released, aimed at various network devices such as routers, switches, and access points. OpenWrt supports many different platforms and architectures and has a build system that allows for simple and convenient cross-compilation, including various components in the build, which makes it easy to create ready-made firmware or disk image with the desired set of pre-installed packages adapted to specific tasks. Currently, builds are created for 35 target platforms.

https://lists.openwrt.org/pipermail/openwrt-announce/2024-September/000058.html

OpenBSD Bans Null Characters in Shell Scripts:

25/09/2024

Theo de Raadt added a change that prevents the use of the null character in shell scripts, processed by the default ksh shell. Null characters in scripts will now cause execution to terminate with an error unless they are included in the data appended at the end of the file following the code. The change is included in the OpenBSD-Current branch, which will form the basis for the OpenBSD 7.6 release.

It is noted that such a change will eliminate the ambiguity of behavior associated with the handling of the null character in code written in C and using strings where the null byte is used to indicate the end of the string. A study of the handling of the null character in various shells showed that in each of them, one or more cases were found where the null byte in the input data or variable contents led to behavior different from other shells, for example, some shells ignored it, some replaced it with a space, and some terminated further parsing of the script or stopped its execution.

https://marc.info/?l%3Dopenbsd-cvs%26m%3D172712621620348%26w%3D2

ELKS 0.8:

25/09/2024

The ELKS 0.8 (Embeddable Linux Kernel Subset) project has been released. It develops a Linux-like operating system for 16-bit Intel 8086, 8088, 80188, 80186, 80286 and NEC V20/V30 processors. The OS can be used on old IBM-PC XT/AT class computers, the Soviet MK-88 computer, the vintage Monotech NuXT 2.0 board and on SBC/SoC/FPGAs recreating the IA16 architecture. The project has been in development since 1995 and began as a fork of the Linux kernel for devices without a memory management unit (MMU). The source code is distributed under the GPLv2 license. The system is supplied in the form of images for writing to floppy disks or running in the QEMU emulator.

In addition to the Linux kernel adapted for 16-bit systems, the project is developing a set of standard utilities (ps, bc, tar, du, diff, netstat, mount, sed, xargs, grep, find, telnet, meminfo, etc.), including a bash-compatible command interpreter, a console window manager screen, text editors Kilo and vi, and a graphical environment based on the X server Nano-X .

Two network stack options are offered - the standard TCP/IP stack of the Linux kernel and the ktcp stack, which works in the user space. Ethernet adapters compatible with NE2K and SMC are supported. It is also possible to create communication channels via a serial port using SLIP and CSLIP. Minix v1, FAT12, FAT16 and FAT32 are supported. The boot process is configured via the /etc/rc.d/rc.sys script. The format of the executable files is borrowed from Minix OS .

https://github.com/jbruchon/elks/releases/tag/v0.8.0

PostgreSQL 17 Release:

26/09/2024

After a year of development, a new stable branch of the PostgreSQL 17 database management system has been released. Updates for the new branch will be released for five years until November 2029. Support for PostgreSQL 12.x, the oldest of the supported branches, will end on November 14.

http://www.postgresql.org/support/versioning/

The Tor Project and the Tails Distribution Merger:

26/09/2024

The developers of the anonymous Tor network and the Tails distribution have announced a merger of the projects. Further development of the Tails distribution will be carried out as part of the Tor project, which will simplify collaboration, increase viability, reduce overhead costs and expand the capabilities to counter digital threats. The Tails distribution (The Amnesic Incognito Live System) is based on Debian, comes with the

GNOME desktop and is designed for anonymous network access. All connections except traffic through the Tor network are blocked by default by a packet filter.

By joining a larger organization that champions the same ideas and has common goals, the Tails development team will be able to focus on developing and improving the distribution rather than being distracted by routine organizational and infrastructure issues. It is noted that the projects have been closely cooperating since 2015 and the merger was a natural step after Tails outgrew the capabilities of its organizational structure.

https://www.torproject.org/

Tcl 9.0 release:

27/09/2024

Tcl/Tk 9.0, a dynamic programming language distributed together with the cross-platform Tk library of basic graphical interface elements, has been released 27 years after the formation of the 8.0 branch. Tcl is mainly used as a platform for creating user interfaces and as an embedded language, while Tcl is also suitable for rapid prototyping, web development, creating network applications, system administration and testing. The project code is distributed under the BSD license.

A significant change in the version number is due to changes that break backward compatibility. Tcl 9.0 changes the logic of applying namespaces to variables - instead of the global namespace, the local namespace is now applied by default. In the case of encoding mismatch during input/output, an error is now returned. The "~" character in file paths is no longer interpreted as the user's home directory. When formatting numbers, the tcl_precision value is no longer taken into account.

http://tcl.tk/

Improving FreeBSD Performance on Laptops:

28/09/2024

The FreeBSD Foundation and Quantum Leap Research have launched a project to improve support for laptops in FreeBSD. The work will be carried out in collaboration with leading manufacturers, including Dell, AMD, and Framework. The project has been allocated $750,000 in its first stage, with a total investment of $1 million.

The stated goal of the project is to bring FreeBSD to a form that meets the needs of modern laptop users, while maintaining the platform's inherent security, performance, and simplicity. In order to compete with other systems, the FreeBSD platform must provide transparency during use - everything must work right out of the box, without the need to change settings. Problem areas that require improvement for ordinary users include support for Wi-Fi, Bluetooth, sleep mode, digital microphones, hardware sound control buttons, and input/output devices.

Special attention will be paid to promoting FreeBSD as an operating system for laptops used in enterprises. Competitive advantages of FreeBSD in this area may be stability, predictability and security. Among the weaknesses of FreeBSD, which hinder its use on laptops in a corporate environment, are limited support for disk encryption, sleep mode and new wireless standards. It is assumed that with high-quality work on laptops, the FreeBSD platform has the potential to become a reliable and secure alternative to Linux and Windows in corporate systems.

https://freebsdfoundation.org/blog/why-laptop-support-why-now-freebsds-strategic-move-toward-broader-adoption/

Second alpha release of COSMIC:

28/09/2024

System76, the company that develops the Linux distribution

Pop!_OS , has begun testing the second alpha version of the COSMIC desktop environment, written in Rust (not to be confused with the old COSMIC , which was based on GNOME Shell). ISO images for systems with NVIDIA (3 GB) and Intel/ AMD (2.5 GB) GPUs, built on the test build of the Pop!_OS 24.04 distribution, are offered for testing. Ready-made packages for Fedora , NixOS , Arch Linux , openSUSE , Serpent OS , Redox and CachyOS are also available.

COSMIC is being developed as a universal project, not tied to a specific distribution and corresponding to Freedesktop specifications. To build the interface, COSMIC uses the Iced library, which uses safe types, a modular architecture and a reactive programming model, and also offers an architecture familiar to developers familiar with the Elm declarative interface language. Several rendering engines are provided, supporting Vulkan, Metal, DX12, OpenGL 2.1 + and OpenGL ES 2.0 + . Developers are offered a ready-made set of widgets, the ability to create asynchronous handlers and use adaptive layout of interface elements depending on the window and screen size. The project is also developing a cosmic-comp composite server based on Wayland.

https://blog.system76.com/post/cosmic-alpha-2-press-release

Release of BusyBox 1.37:

29/09/2024

After almost two years of development, BusyBox 1.37 is released, implementing a set of standard UNIX utilities, designed as a single executable file and optimized for minimal consumption of system resources with a package size of less than 1 MB. The first release of the new 1.37 branch is positioned as unstable, full stabilization will be provided in version 1.37.1, which is expected in a few months. The project code is distributed under the GPLv2 license.

The modular nature of BusyBox makes it possible to create a single unified executable file containing an arbitrary set of utilities implemented in the package (each utility is available as

a symbolic link to this file). The size, composition and functionality of the utility collection can be varied depending on the needs and capabilities of the embedded platform for which the build is being performed. The package is self-sufficient; when statically building with uclibc, to create a working system on top of the Linux kernel, you only need to create several device files in the /dev directory and prepare configuration files. Compared to the previous release 1.36, the size of the code in RAM in BusyBox 1.37 has increased by 1535 bytes (from 1022792 to 1024327 bytes).

http://www.busybox.net/

rTorrent 0.10.0 has been released:

29/09/2024

Five years after the previous release, the console BitTorrent client rTorrent 0.10.0 is available. The program interface is built using the ncurses library and can be used when connecting via SSH in terminal multiplexers such as tmux and screen. One can transfer the client to the background mode, controlled using XMLRPC. rTorrent is compatible with almost all BitTorrent trackers, supports Magnet links, PE (Protocol Encryption), super-seed (Super-seeding), DHT (Distributed Hash Table) and PEX (Peer exchange). The project code is written in C++ and is distributed under the GPLv2 license.

The new version includes optimizations that increase throughput and reduce CPU load. The trackers.delay_scrape command has been added to the .rtorrent.rc configuration file, implementing the ability to instantly launch and also solving the problem with crashes when processing thousands of torrents. The build has been adjusted when LTO (Link Time Optimizations) are enabled in the compiler. A serious memory leak when processing RPC commands has been fixed.

https://github.com/rakshasa/rtorrent/releases/tag/v0.10.0

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qBittorrent 5.0 Released:

30/09/2024

The qBittorrent 5.0 torrent client, has been released. It is written using the Qt toolkit and is being developed as an open alternative to µTorrent, with an interface and functionality similar to it. qBittorrent features include: an integrated search engine, RSS subscription, support for many BEP extensions, remote control via a web interface, a sequential download mode in a specified order, advanced settings for torrents, peers and trackers, a bandwidth planner and IP filter, an interface for creating torrents, and support for UPnP and NAT-PMP. The project code is written in C++ and is distributed under the GPLv2+ license. Builds are generated for Linux, Windows and macOS.

https://www.qbittorrent.org/news.php

FFmpeg 7.1 Released:

30/09/2024

After six months of development, the FFmpeg 7.1 multimedia package is available, including a set of applications and a collection of libraries for operating on various multimedia formats (recording, converting and decoding audio and video formats). The package is written in C and distributed under the LGPL and GPL licenses.

https://ffmpeg.org/index.html%23news

Phosh 0.42.0 released:

30/09/2024

Phosh 0.42 has been released, a mobile desktop shell based on

GNOME technologies and the GTK library. The environment was initially developed by Purism as an analogue of GNOME Shell for the Librem 5 smartphone, but then became one of the unofficial GNOME projects and is used in postmarketOS , Mobian , Droidian , some firmware for Pine64 devices and the Fedora edition for smartphones. Phosh uses the Phoc composite server running on top of Wayland, as well as its own on-screen keyboard squeekboard. The project's code is distributed under the GPLv3+ license.

https://phosh.mobi/releases/rel-0.42.0/

Apple has published the open source components used in macOS 15:

01/10/2024

Apple has released the source code for the low-level system components of the macOS 15 (Sequoia) operating system, which use free software, including parts of Darwin and other non-GUI components, programs, and libraries. A total of 171 source packages have been released (the crontabs package has been removed from the macOS 14.x branch).

Among other things, the XNU kernel code is available, that is published as code snippets associated with the next release of macOS. XNU is part of the open source Darwin project and is a hybrid kernel combining the Mach kernel, components from the FreeBSD project, and the IOKit C++ API for writing drivers.

In addition, open components used in the iOS 18.0 mobile platform have been published. The publication includes two packages - WebKit and libiconv.

https://opensource.apple.com/releases/

Oracle Releases Unbreakable Enterprise Kernel R7U3:

02/10/2024

Oracle has released the third functional update for the Unbreakable Enterprise Kernel R7 kernel, which is being developed for use in the Oracle Linux distribution as an alternative to the standard kernel package from Red Hat Enterprise Linux. The kernel is available for the x86_64 and ARM64 (aarch64) architectures. The kernel source code, including a breakdown into individual patches, is published in Oracle's public Git repository.

The Unbreakable Enterprise Kernel 7 package is based on the Linux kernel 5.15, supplemented with optimizations, fixes and new features, such as DTrace integration and improved Btrfs support. The kernel is tested for compatibility with most applications running on RHEL and is specially optimized for work with Oracle industrial software and hardware. Installation and src packages with the UEK R7U3 kernel are prepared for Oracle Linux 8.x and 9.x .

https://blogs.oracle.com/linux/post/unbreakable-enterprise-kernel-release-7-update-3-delivers-enhanced-performance-and-security

Nitrux 3.7.0 release:

02/10/2024

Nitrux 3.7.0 has been released, built on Debian, KDE technologies and the OpenRC initialization system. The project offers its own NX Desktop desktop, which is an add-on to KDE Plasma. Based on the Maui library, a set of typical user applications are being developed for the distribution, which can be used both on desktop systems and on mobile devices. To install additional applications, AppImages is promoted. The size of the full boot image is 3.2 GB. The project's developments are distributed under free licenses.

The NX Desktop offers a different style design, its own implementation of the system tray, notification center, and various plasmoids, such as a network connection configurator and a multimedia applet for adjusting the volume and managing the playback of multimedia content. Applications created using the MauiKit framework include the Index file

manager (Dolphin can also be used), the Note text editor, the Station terminal emulator, the VVave music player, the Clip video player, the NX Software Center application control center, and the Pix image viewer.

https://nxos.org/changelog/release-announcement-nitrux-3-7-0/

Release of Manjaro Linux 24.1:

02/10/2024

Manjaro Linux 24.1, based on Arch Linux and aimed at beginners, is out. The distribution is notable for its simplified and user-friendly installation process, support for automatic hardware detection and installation of the drivers required for its operation. Manjaro is supplied as live builds with the KDE (4.1 GB), GNOME (4 GB) and Xfce (3.8 GB) graphical environments, created for the x86_64 architecture and various boards based on ARM processors. With the participation of the community, builds with Budgie, Cinnamon, Deepin, LXQt and i3 are additionally being developed .

Manjaro uses its own BoxIt toolkit to manage repositories, which is based on Git. The repository is maintained on a rolling update basis, but new versions undergo an additional stabilization stage. In addition to its own repository, there is support for using the AUR (Arch User Repository). The distribution comes with a graphical installer and a graphical interface for configuring the system.

https://forum.manjaro.org/t/manjaro-24-1-xahea-released/168699

OpenWrt One Router:

03/10/2024

The first official version of the OpenWrt One/AP-24.XY wireless router, developed jointly by the OpenWrt and Banana Pi projects, has been announced for sale to the public. The OpenWrt community designed the device and prepared the

software, while the Banana Pi community took on the work of manufacturing and distributing it through its sales network. The router is available for order via Aliexpress Global for 99 euros. A certain percentage of each unit sold is donated to the OpenWrt community.

To reduce the cost of the project, the OpenWrt One is based on the same hardware as the Banana Pi R4 boards, which are equipped with open firmware (except for the wireless chip firmware), are supplied with U-Boot and are supported in the Linux kernel. The device uses the MediaTek MT7981B SoC (Filogic 820) with a dual-core Cortex-A53 1.3 GHz CPU and a MediaTek MT7976C wireless chip (Wi-Fi 6, 2x2 2.4 GHz + 3x3/2x2 + DFS 5Ghz). The router is equipped with 1 GB of RAM (DDR4), 256 MB of SPI NAND Flash and 16 MB of SPI NOR Flash.

The device comes with two Ethernet ports (2.5 GbE + 1 GbE), USB 2.0 host Type-A, USB-C (Holtek HT42B534-2 UART with USB converter, console and CDC-ACM support), JTAG 10-pin and a mikroBUS expansion slot. To connect additional drives, there is a M.2 slot for NVMe SSD (PCIe gen 2 x1). There is support for PoE 802.3at/af. Schematics and PCB pinouts are available for download.

The case is designed in a minimalist style and contains, power, Ethernet and USB connectors, only two buttons (reset and user button), as well as a mechanical switch for selecting the boot mode (recovery or standard mode). Four LEDs are used to indicate the status. The board underlying the router has a size of 148 x 100.5 mm and is fully compatible with cases for the Banana Pi BPI-R4.

The first version of the device that went on sale is intended for testing by developers and enthusiasts, but is not yet ready for end users. To simplify the experiments, the device has several levels of protection against "bricking": booting from a separate Flash in recovery mode, easy access to the console and an external hardware watchdog monitor based on the EM Microelectronic EM6324 chip, connected via GPIO.

To increase reliability, OpenWrt One uses two different types of flash drives at the same time: NAND for the U-Boot bootloader and Linux image, and write-protected NOR Flash with an additional bootloader and recovery image. A special hardware switch is provided to select booting from NOR or NAND. The default firmware is OpenWrt-based, but if desired, you can use the M.2 slot for NVMe and boot other Linux distributions from NVMe. The NVMe slot can also be used for network storage.

https://banana-pi.org/en/product-news/557.html

Release of Ardour 8.8:

03/10/2024

Ardour 8.8 has been published. It is designed for multi-channel recording, processing and mixing of sound. Ardour provides a multi-track time scale, unlimited level of rollback of changes during the entire life, working with a file (even after closing the program) and support for various hardware interfaces. The program is positioned as a free analogue of professional tools ProTools, Nuendo, Pyramix and Sequoia. The code is distributed under the GPLv2 license. In the near future, unofficial builds for Linux will be formed in the Flatpak format .

https://github.com/Ardour/ardour/releases/tag/8.8

Samsung Adapts Tizen Mobile Platform to RISC-V Architecture:

04/10/2024

Samsung announced at the Samsung Developer Conference 2024, that it is porting its open-source Tizen mobile platform to devices with RISC-V-based processors. Samsung is exploring the use of RISC-V in smart TVs and other consumer devices, and is also collaborating with SiFive to prototype TVs with RISC-V cores in the SiFive Performance series. One such prototype, built on the SiFive Performance P470 RISC-V processor and running firmware with the Tizen platform, was demonstrated

at the exhibition.

Tizen code is licensed under GPLv2, Apache 2.0 and BSD, and is developed under the auspices of the Linux Foundation, mainly by Samsung. The platform continues to develop the MeeGo and LiMO projects and is distinguished by the ability to use Web API and web technologies (HTML5/JavaScript/CSS) to create mobile applications. The graphical environment is built on the Wayland protocol and snoppets of the Enlightenment project, Systemd is used to manage services.

RISC-V provides an open and flexible machine instruction set that allows microprocessors to be designed for any application without requiring royalties or imposing conditions on use. RISC-V allows for the creation of completely open SoCs and processors. Currently, several dozen microprocessor core variants, more than a hundred SoCs, and chips in production are being developed based on the RISC-V specification by various companies and communities under various free licenses (BSD, MIT, Apache 2.0) . RISC-V support has been present since the releases of Glibc 2.27, binutils 2.30, gcc 7, and Linux kernel 4.15.

https://www.sifive.com/blog/samsung-highlights-work-to-bring-risc-v-to-tizen-

DogLinux build to check hardware:

05/10/2024

An update of the specialized DogLinux distribution build (Debian LiveCD in the style of Puppy Linux) has been published. It is based on Debian 12 "Bookworm" and is intended for testing and servicing PCs and laptops. The distribution includes applications such as GPUTest, Unigine Heaven, CPU-X, GSmartControl, GParted, Partimage, Partclone, TestDisk, ddrescue, WHDD, DMDE. The distribution allows you to check the performance of the equipment, load test the processor and video card, check SMART HDD and NVMe SSD. The size of the Live image , loaded from USB drives, is 1.36 GB (torrent).

https://gumanzoy.blogspot.com/2024/10/20241004-doglinux.html

Qmmp Music Player:

05/10/2024

After a two-year break, the Qmmp 1.7.0 and Qmmp 2.2 music players have been released (Qmmp 2.2 continues the development of the branch that switched to Qt 6, while Qt 5.15 is enough for version 1.7). The player includes two interfaces: a "simple" one using standard elements, and a "classic" one that copies the Xmms/Winamp/Audacious interface. OSS4 (FreeBSD), ALSA (Linux), Pulse Audio, JACK, QtMultimedia, Icecast, WaveOut (Win32), DirectSound (Win32), and WASAPI (Win32) can be used to output sound. The code is written in C + + and is distributed under the GPLv2 license. Ready-made packages have been created for Ubuntu. At the same time, collections of plugins that are not part of the main package have been created - Qmmp Plugin Pack 1.7.0 and 2.2.0.

http://qmmp.ylsoftware.com/index.php

The fwupd 2.0.0 firmware tool is now available:

05/10/2024

Richard Hughes, the creator of the PackageKit project and an active contributor to GNOME, has released fwupd 2.0.0, a package that provides a background process for firmware updates and the fwupdmgr utility for managing firmware, checking for new versions, and downloading firmware. The project's code is written in C and is licensed under the LGPLv2.1 license.

The project provides OEMs and firmware developers with a service for uploading firmware to a special centralized LVFS (Linux Vendor Firmware Service) catalog, which can be used in Linux distributions using the fwupd toolkit. Currently, the catalog offers firmware for more than 1,600 devices from 160 manufacturers. Using a centralized catalog eliminates the need

for manufacturers to create packages for distributions and allows firmware to be transferred in a ".cab" archive with additional metadata, which is also used when publishing firmware for Windows.

fwupd supports automatic firmware update mode, without the need for any user action, and the operation execution after user confirmation or request. Fwupd and LVFS are used in RHEL, Fedora, Ubuntu, SUSE, Debian and many other distributions for automated firmware updates, and are also supported in the GNOME Software and KDE Discover application managers. At the same time, fwupd is not limited to desktop systems and is suitable for updating firmware on smartphones, tablets, servers and Internet of Things devices.

https://blogs.gnome.org/hughsie/2024/10/04/fwupd-2-0-0/

Mitmproxy 11 HTTPS analyzer releases with HTTP/3 support:

06/10/2024

Mitmproxy 11 project is out. It develops a toolkit for intercepting traffic inside connections established via HTTPS, with the ability to inspect, modify and replay traffic. The main purpose of Mitmproxy is to monitor traffic in corporate systems and diagnose problems, for example, identifying hidden network activity of applications. The source code of the project is written in Python and distributed under the MIT license.

To analyze HTTPS traffic, Mitmproxy is placed on a transit node, where it intercepts client requests and translates them into requests sent from itself to the target server. Mitmproxy establishes a regular HTTPS connection with the server requested during the client session, and a dummy connection is established with the client on behalf of the target server with a fake SSL certificate generated for the client on the fly. The traffic received from the client is redirected to the target server, and the received responses are translated back to the client.

Several methods are supported for redirecting traffic through

mitmproxy , such as specifying the mitmproxy address as an HTTP proxy in the browser settings, working as a SOCKS5 proxy, using it as a reverse proxy in front of the HTTP server, and organizing transparent forwarding using packet filter rules or routing wrapping. In order to prevent the fake certificate used when connecting to the client from causing the browser to display warnings about connection security issues, the user is offered a choice to install the mitmproxy root certificate in the system, which can be done either manually or by opening a special mitm.it host in the browser.

https://mitmproxy.org/posts/releases/mitmproxy-11/

Release of Cage 0.2:

06/10/2024

The Cage 0.2 composite server is now available. It uses Wayland and is designed to run standalone applications in kiosk mode. Cage is used in home automation systems, demonstration stands, electronic signs, and self-service terminals. The project code is written in C and is licensed under the MIT license.

The interface in Cage is limited to one application, and the user cannot go beyond this application and access the operating system. The screen is tied to one output device, and all auxiliary dialogs are displayed in the center of the screen without the ability to move or change the size. Inserting and retrieving data through the clipboard is supported. Applications are directly linked to the launched graphical environment, for example, to create a kiosk with the Epiphany browser, it is enough to run "cage /usr/bin/epiphany", and after exiting the program, the composite server also terminates.

https://github.com/cage-kiosk/cage/releases/tag/v0.2.0

Week 41

Linus Torvalds is unhappy with Bcachefs commits again:

07/10/2024

Linus Torvalds has issued a new criticism of the maintenance practices of Bcachefs in the mainline Linux kernel. The gist of the complaint is that Kent Overstreet, the author of Bcachefs, always sends in a lot of changes at the last minute before the next "-RC" release, and this time his changes caused the 6.12-RC1 build to break on big-endian systems when Bcachefs was enabled, because the patches were only tested in Kent's local branch and no other contributors were involved in reviewing them.

The pull request was eventually accepted, but a discussion ensued about testing, continuous integration systems, and community engagement, with several people noting that Kent clearly had trouble communicating with other developers and always seemed to think he was right, which was causing problems for the project in the mainline kernel. Linus warned Kent that he was considering simply removing Bcachefs from the mainline kernel, as Kent continued to play alone in his sandbox, not joining in, and unwilling to play by the kernel community's rules.

https://lore.kernel.org/lkml/172816780614.3194359.10913571563159868953.pr-tracker-bot@kernel.org/T/%23r631c24cd07f5820a4cbff8f25dff1d1a0c3cf2e7

Release of antiX 23.2:

08/10/2024

The lightweight Live distribution, AntiX 23.2 has been published. It is aimed at installation on outdated hardware. The release is based on Debian 12, but is supplied without the

system manager systemd and with eudev instead of udev. For initialization, you can use runit or sysvinit. The user environment is using the IceWM window manager by default, but fluxbox, jwm and herbstluftwm are additionally included in the delivery. The size of the iso images are: 2.1 GB (full, includes LibreOffice and 4 window managers - IceWM, fluxbox, jwm and herbstluftwm), 1.2 GB (basic), 564 MB (without graphics) and 249 MB (installation over the network). The builds are prepared for the x86_64 and i386 architectures.

The full build offers Linux kernel 6.1.105, and the other builds 5.10.224. The versions of applications have been updated, for example, LibreOffice 24.8.2, Firefox 128.3.0esr, Seamonkey 2.53.19.1. The delivery of the smtube application for watching YouTube has been discontinued.

https://antixlinux.com/antix-23-2-released/

Release of MX Linux 23.4:

08/10/2024

The update of the lightweight MX Linux 23.4 distribution, created as a result of the joint work of the communities formed around the antiX and MEPIS projects, is out. The release is based on Debian with improvements from the antiX project and packages from its own repository. The distribution uses the sysVinit initialization system and its own tools for configuring and deploying the system. There are 32- and 64-bit builds (x86_64 , i386) with the Xfce desktop (2.3 GB), as well as 64-bit builds with the KDE desktop (2.8 GB) and builds (1.8 GB) with the Fluxbox window manager, available for download.

https://mxlinux.org/blog/mx-23-4-libretto-now-available/

Development of openSUSE Leap 16.0:

08/10/2024

The start of development on the openSUSE Leap 16.0 distribution has been announced. It is built on the technologies

of the next major branch of the commercial SLES 16 distribution, which is moving to the new SLFO (SUSE Linux Framework One) platform, previously known as ALP (Adaptable Linux Platform). It is noted that the openSUSE Leap 16.0 branch attempts to combine the traditional capabilities of the distribution with the new SLFO technologies. The new branch is positioned as a traditional distribution, delivered in a fundamentally new form and using packages from SLES 16 and the community-supported Factory repository .

openSUSE Leap 16.0 is scheduled for release in October 2025. The openSUSE Leap 15.6 release published in June will be the last release of the 15.x branch, and access to package updates from SLES 15 SP7 is planned to be provided through the Package HUB. Pre-alpha builds of openSUSE Leap 16.0 have been created for testing. Three installation modes are offered: basic, GNOME and KDE. The new Agama installer is used for installation.

The SLFO platform is positioned as a continuation of the development of the SUSE Linux Enterprise distribution and is distinguished by the division of the distribution's basic foundation into parts. The main distribution of SUSE 16 will be a stripped-down "host OS" environment, including only the components that are minimally necessary for working on top of the hardware and management. All applications and user space components will be launched not in a mixed environment, but in separate containers or virtual machines running on top of the "host OS" and isolated from each other.

https://news.opensuse.org/2024/10/07/leap-16-0-prealpha/

OpenBSD 7.6 Released:

08/10/2024

The release of the free UNIX-like operating system OpenBSD 7.6 has been announced. The size of the full installation ISO image of the OpenBSD 7.6 base system is 702 MB.

In addition to the operating system itself, the OpenBSD project

is known for its components, which have become widespread in other systems and have established themselves as some of the most secure and high-quality solutions. Among them are: LibreSSL (a fork of OpenSSL), OpenSSH , the PF packet filter , the OpenBGPD and OpenOSPFD routing daemons , the OpenNTPD NTP server , the OpenSMTPD mail server , the tmux text terminal multiplexer (analogous to GNU screen) , the identd daemon with the implementation of the IDENT protocol, a BSDL alternative to the GNU groff package - mandoc , a protocol for organizing fault-tolerant systems CARP (Common Address Redundancy Protocol), a lightweight http server , and an OpenRSYNC file synchronization utility

https://www.mail-archive.com/announce@openbsd.org/msg00535.html

Libreboot 20241008 released:

09/10/2024

The free boot firmware Libreboot 20241008 has been published, which has the status of an experimental release focused on the development of functionality (stable releases mainly contain fixes and are published approximately once a year, the last stable release was in June). The project develops a ready-made build of the Coreboot project , providing a replacement for proprietary UEFI and BIOS firmware responsible for initializing the CPU, memory, peripherals and other hardware components, with minimal binary inserts.

Libreboot aims to create a system environment that allows for as little proprietary software as possible, not only at the operating system level, but also at the boot firmware level. Libreboot complements Coreboot with tools to simplify use - by end users, creating a ready-made distribution that can be used by any user without special skills.

The new version features a shorter code base and a simpler build system - the size of shell scripts used during build has been reduced from 1,482 to 1,159 lines of code without any loss of functionality. Support for the Sony PlayStation 1 game

console has been added, with the firmware using the Open BIOS code from the PCSX Redux project instead of CoreBoot. Support has been added for five Dell Latitude laptop models (E6220, E6320, E6330, E6230, E4300) and three Dell OptiPlex PC models (3050 Micro, 7010 SFF, 9010 SFF). Synchronization with the following code bases has been implemented: Coreboot as of July 29, SeaBIOS — June 24, Flashprog — August 2, GRUB — June 17. U-Boot has been updated to version 2024.07.

https://libreboot.org/news/libreboot20241008.html

Release of XCP-ng 8.3:

09/10/2024

After four years of development, the XCP-ng 8.3 project has been released, developing a free and open source replacement for the proprietary XenServer platform for deploying cloud infrastructure and managing its operation. XCP-ng recreates the functionality that Citrix excluded from the free Citrix Hypervisor/XenServer, starting with version 7.3 , and allows you to quickly deploy a server and workstation virtualization system, offering tools for centralized management of an unlimited number of servers and virtual machines. A 640 MB installation image is available for download.

The system features include the ability to combine several servers into a pool (cluster), high availability tools, snapshot support, and shared resource sharing using XenMotion technology. Live migration of virtual machines between cluster hosts and between different clusters/individual hosts (that do not have a common storage) is supported, as well as live migration of VM disks between storages. The platform can work with a large number of data storage systems and features a simple and intuitive interface for installation and administration.

It is noted that the XCP-ng 8.3 branch will be the last in the 8.x series, and the next one will be the 9.0 release, which will mark the project's departure from repeating XenServer in favor

of implementing its own vision for building a platform. XCP-ng 9.0 will also target areas of application that the XenServer project has not focused on, such as providing tools for migration from VMware platforms.

https://xcp-ng.org/blog/2024/10/07/xcp-ng-8-3/

Ubuntu 24.10 release:

10/10/2024

The Ubuntu 24.10 "Oracular Oriole" release has been published. It is classified as an intermediate release, updates are mdae for 9 months (support will be provided until July 2025). Ready-made installation images have been created for Ubuntu, Ubuntu Server , Lubuntu , Kubuntu , Ubuntu Mate , Ubuntu Budgie , Ubuntu Studio , Xubuntu , UbuntuKylin (edition for China), Ubuntu Unity , Edubuntu and Ubuntu Cinnamon .

Xubuntu is provided with components from the Xfce 4.19 branch, which is developing the future stable release Xfce 4.20. For example, the panel, desktop, file manager, configurator and many applets have been updated.

The Ubuntu Studio edition has switched to using KDE Plasma 6.1 and the standard Linux kernel built for Ubuntu, instead of the "lowlatency" kernel. A minimal installation mode has been added. The Ubuntu Studio Audio Configuration utility for configuring PipeWire has been included. Support for PulseAudio and JACK sound servers has been deprecated. OBS Studio 30.2, Ardour 8.6.0, Audacity 3.6.1, digiKam 8.4.0, Kdenlive 24.08.1, Krita 5.2.3 have been updated.

Ubuntu Cinnamon comes with the Cinnamon desktop environment version 6.0.4 , the Cinnamon Control Center configuration tool version 6.2.0, and the Nemo file manager version 6.0.2. Lubuntu ships the LXQt 2.0.0 desktop environment and has migrated to Qt6. KDE 's Breeze theme is replaced by a new Kvantum theme that is reminiscent of the previous design but free of the incompatibilities with the new

LXQt branch that Breeze had. In Ubuntu Budgie, the main efforts in the development of the new release were focused on providing support for the Wayland protocol. The Budgie desktop environment has been updated to version 10.9.2 . The menu now shows applications launched in the terminal (such as Neovim). The layout of elements on the desktop has been changed, instead of the Plank panel, a custom panel with the Pocillo design theme is used. Support for the Jpeg-xl image format has been added. Ubuntu Mate uses the MATE 1.26.2 desktop environment release and switches to the Slick Greeter login screen with the ability to customize it in graphical mode. The iso image size has been reduced from 4.1 GB to 3.3 GB by reducing the number of packages required to run the Live session.

Kubuntu has migrated to KDE 6 technologies. The releases used are KDE Plasma 6.1.5, KDE Gear 24.08, Qt 6.6, KDE Frameworks 6.5.0. A Wayland-based session is offered by default, and X11 support is moved to the option category.

https://lists.ubuntu.com/archives/ubuntu-announce/2024-October/000307.html

Asahi Linux Project Prepares for Running Windows Games:

11/10/2024

The developers of the Asahi Linux project, which is porting Linux to Mac computers with Apple ARM chips, have presented a toolkit for running modern computer games in Linux environments running on systems with the Apple M1 chip. We are talking about AAA games available in the Steam catalog and compiled for the x86_64 architecture. The toolkit provides integration of the drivers created by the project, implementing the Vulkan 1.3 and OpenCL 3.0 API, with components that provide emulation of the x86_64 architecture and compatibility with Windows.

The packages required for operation have already been added to the standard repository of the Fedora Asahi Remix

distribution - to launch games, it is enough to update the drivers with the command "dnf upgrade --refresh" and install Steam with the command "dnf install steam" and it will pull in all the necessary dependencies. The stack used to launch games is built on the Vulkan driver Honeykrisp, the FEX emulator , which allows you to run x86 applications on ARM systems, the Wine project and the DXVK and vkd3d-proton layers with the implementation of the DirectX API on top of Vulkan.

Due to the additional overhead caused by emulation, 16 GB of RAM is recommended. Alignment issues due to the mismatch between the memory page sizes used by the operating system and those required by applications (x86 programs are designed for 4K pages, while Apple systems use 16K pages) were resolved by running a second Linux kernel in a virtual environment, built with a different memory page size. The muvm toolkit is used to run games in separate virtual machines with their own kernels . For example, Fallout 4 was able to run in this way.

To support games like The Witcher 3 and Ghostrunner that use tessellation and geometry shaders, emulation using compute shaders is used. Features not yet implemented include support for sparse texturing in the Honeykrisp driver, which is required to run some DX12-based games like Cyberpunk 2077. Work is also underway to optimize performance to achieve 60 FPS in an emulated environment.

https://rosenzweig.io/blog/aaa-gaming-on-m1.html

Hyper-V host environment components into the Linux kernel:

11/10/2024

Microsoft has proposed the first series of patches for inclusion in the main Linux kernel, related to a host environment (Dom0, root partition) for the Hyper-V hypervisor. The host environment is responsible for managing the hypervisor, launching of guest systems, allocating resources and ensuring the interaction of virtual machines with the hardware.

The ability to use Linux as a host environment for the Hyper-V virtualization system was initially introduced in 2020 and is already being used in Microsoft's infrastructure, but has so far been developed in the form of separate patches. The new initiative aims to integrate these patches into the main kernel. The need to use Linux to manage the Hyper-V hypervisor is due to the desire to simplify maintenance and improve the performance of servers serving Microsoft cloud systems, given that since 2018, the number of Linux guest systems in the Azure cloud service exceeds the number of Windows environments.

The initial set of patches is currently limited to adding headers used by the Hyper-V hypervisor, which complement the headers used by the guest drivers that were previously included in the kernel. The SPEC file for the 5.15 kernel, which includes the host environment implementation for the Hyper-V hypervisor, can be found in the Azure Linux distribution repository , but the use of the /dev/mshv device for managing Hyper-V is not yet documented. The Hyper-V guest drivers were added to the Linux kernel in 2009 and have been shipped since release 2.6.32 .

https://lore.kernel.org/lkml/1727985064-18362-1-git-send-email-nunodasneves@linux.microsoft.com/

Amazon's Open 3D Engine 09/24 Released:

11/10/2024

After a year of development, the non-profit organization Open 3D Foundation (O3DF) has released the open source 3D game engine Open 3D Engine 24.09 (O3DE), suitable for developing modern AAA games and high-fidelity simulators capable of running in real time and providing cinematic-level quality. The code is written in C++ and published under the Apache 2.0 license. There is support for Linux , Windows , macOS, iOS and Android platforms.

The O3DE engine was open-sourced in July 2021 by Amazon and is based on the code of the previously developed

proprietary engine Amazon Lumberyard, built on the CryEngine engine technologies licensed from Crytek in 2015. Since its opening, the engine's development has been overseen by the Open 3D Foundation, a non-profit organization created under the auspices of the Linux Foundation. In addition to Amazon , companies such as Epic Games, Adobe, Huawei, Microsoft, Intel, and Niantic have joined the project.

The engine includes an integrated game development environment, a multi-threaded photorealistic rendering system Atom Renderer with support for Vulkan, Metal and DirectX 12, an extensible 3D model editor, a character animation system (Emotion FX), a prefab development system, a real-time physics simulation engine and mathematical libraries using SIMD instructions. A visual programming environment (Script Canvas), as well as the Lua and Python languages, can be used to define game logic. There are also over 30 plugins avalable.

]*https://github.com/o3de/o3de/releases/tag/2409.0*

Release of RPM 4.20:

12/10/2024

After a year of development, the RPM 4.20.0 package manager was released. The RPM4 project is developed by Red Hat and is used in distributions such as RHEL, Fedora, SUSE, openSUSE, ALT Linux, OpenMandriva, Mageia, PCLinuxOS and Tizen. The project code is distributed under the GPLv2 and LGPLv2 licenses.

Next year, a major branch of RPM 6 is expected to be published, which will use a new archive format that, unlike the currently used cpio format, will allow creating packages larger than 4 GB (overcoming this limitation is important because the SRC package with Chromium is close to the limit and has a size of 3.7 GB). The new branch also intends to allow the use of the C++ language for RPM development. The new major branch will be dedicated to the anniversary of the project - November 27, 2025 will mark 30 years since the first commit to RPM. RPM 5.x versions will be skipped to avoid overlaps with the

RPM5 project, which is not directly related to Red Hat's RPM, was developed by an independent team of developers and has not been updated since 2016.

http://rpm.org/

KDE Neon builds based on Ubuntu 24.04:

12/10/2024

The developers of the KDE Neon project, which creates Live builds with current versions of KDE programs and components, have announced the transition of builds to use the LTS release of Ubuntu 24.04. Several versions of KDE Neon builds are available for download: User Edition based on the latest stable releases of KDE, Testing Edition based on KDE testing branches with bug fixes that have not yet been transferred to stable releases, Unstable Edition based on repository branches in development, to which new features are transferred, and Developer Edition, which supplements Unstable Edition with libraries for developers.

The KDE neon project was created by Jonathan Riddell, who was removed from his position as the leader of the Kubuntu distribution, with the aim of providing the ability to install fresh versions of KDE programs and components. KDE Neon builds and their associated repositories are updated whenever possible immediately after KDE releases, significantly earlier than new versions of KDE appear in the distribution repositories.

https://blog.neon.kde.org/2024/10/10/kde-neon-rebased-on-ubuntu-24-04-lts/

Distrobox 1.8 Released:

12/10/2024

The Distrobox 1.8 toolkit has been released, allowing you to quickly install and run any Linux distribution in a container and ensure its integration with the main system. The project

code is written in Shell and is distributed under the GPLv3 license.

The project provides an add-on for Docker, Podman or Lilipod and is distinguished by maximum simplification integration and operation of a running environment with the rest of the system. To create an environment with another distribution, it is enough to execute one command distrobox-create, without thinking about the subtleties. After launching, Distrobox forwards the user's home directory to the container, configures access to the X11 and Wayland server to run graphical applications from the container, allows connecting external drives, adds sound output, implements integration at the level of the SSH agent, D-Bus and udev.

Distrobox claims to be able to use 26 distributions as a host system , including Alpine, Manjaro, Gentoo, EndlessOS, NixOS, Void, Arch, SUSE, Ubuntu, Debian, RHEL and Fedora. Any distribution for which there are images in OCI format can be launched in the container. After installation, the user can fully work in another distribution without leaving the main system.

The main areas of application include experiments with atomically updated distributions such as Endless OS, Fedora Silverblue, OpenSUSE MicroOS and SteamOS3, creation of separate isolated environments (for example, to run a home configuration on a work laptop), access to more recent versions of applications from experimental branches of distributions.

https://github.com/89luca89/distrobox/releases/tag/1.8.0

Wayland-Protocols 1.38 Released:

12/10/2024

The wayland-protocols package 1.38 has been released, containing a set of protocols and extensions that complement the core Wayland protocol and provide the capabilities needed to build composite servers and user environments.

All protocols consistently go through three phases -

development, testing and stabilization. After the development stage is completed (category " unstable "), the protocol is placed in the "staging" branch and officially included in the wayland-protocols set, and after testing is completed, it is moved to the stable category. Protocols from the "staging" category can already be used in composite servers and clients where the functionality associated with them is required. Unlike the "unstable" category, "staging" prohibits making changes that break compatibility, but if problems and shortcomings are detected during testing, a replacement with a new major version of the protocol or another Wayland extension is not excluded.

https://lists.freedesktop.org/archives/wayland-devel/2024-October/043851.html

Week 42

Release of Inkscape 1.4

14/10/2024

After more than a year of development, the release of the free vector graphics editor Inkscape 1.4 is ready for your enjoyment. The editor provides flexible drawing tools and provides support for reading and saving images in SVG, OpenDocument Drawing, DXF, WMF, EMF, sk1, PDF, EPS, PostScript and PNG formats. Ready-made builds of Inkscape are prepared for Linux (AppImage, Snap and Flatpak), macOS and Windows.

https://inkscape.org/news/2024/10/13/inkscape-launches-version-14-powerful-new-accessib/

Qt 6.8 Framework Release:

14/10/2024

The Qt Company has published the Qt 6.8 framework , which continues to work on stabilizing and expanding the functionality of the Qt 6 branch. Qt 6.8 provides support for Windows 10+, macOS 12+, Linux (Ubuntu 22.04/24.04, openSUSE 15.5, SUSE 15 SP5, RHEL 8.8/9.2, Debian 11.6), iOS 16+, Android 9+ (API 23+), webOS, WebAssembly, INTEGRITY, VxWorks, FreeRTOS and QNX. The source code of the Qt components is provided under the LGPLv3 and GPLv2 licenses.

Qt 6.8 has been given the status of an LTS release, where updates will be generated for five years for commercial license holders, which is two years longer than in previous LTS releases. For non-commercial users, the maintenance period will be six months (until a new major release is generated). Support for the previous LTS branch Qt 6.5 will last until May 2026, and support for the previous LTS branch Qt 6.2 will end

on September 30, 2024. The Qt 5.15 branch will be supported until May 2025.

https://www.qt.io/blog/qt-6.8-released

Solus 4.6 released:

15/10/2024

Solus 4.6 has been published. It is not based on packages of other distributions and develops its own installer, package manager and configurator. Previously, the Budgie desktop was developed as part of the distribution, but now it has been separated into an independent project. It was decided to develop the next branch of Solus 5 on the technologies of the SerpentOS distribution. The code is distributed under the GPLv2 license, using C and Vala languages for development. Builds with the Budgie, GNOME, KDE Plasma and Xfce desktops are provided. The size of the iso images is 2.6-2.9 GB (x86_64).

The distribution follows a hybrid development model, whereby major releases are released periodically, introducing new technologies and significant improvements, and in between major releases the distribution evolves using a rolling package update model.

https://getsol.us/2024/10/14/solus-4-6-released/

OpenSSH, moves to sshd-auth:

15/10/2024

The OpenSSH developers have continued to split sshd into several separate executable files. In the first stage of the split, implemented in May, functions related to session processing were moved from sshd to a separate process sshd-session, and only the functionality necessary for accepting a new network connection and starting sshd-session for each new session was left in sshd. Yesterday, a change was made to the OpenSSH code base, adding another process - sshd-auth, to which the

code performing authentication was moved from sshd-session.

The sshd-auth process is started from sshd-session and allows additional isolation of authentication-related data in the address space of a separate process, which prevents access to this data in memory in the event of attacks on the code used to handle the connection stages before authentication is complete. In addition, the change slightly reduces memory consumption, since authentication-related code is now present in memory only during authentication, and is then unloaded when the sshd-auth process terminates.

By analogy with sshd, sshd-session and ssh-agent, the sshd-auth process uses a random recomposition of the executable file during each boot of the operating system. Random recomposition makes it difficult to predict the shifts of functions in executable files and libraries, which complicates the creation of exploits using return-oriented programming (ROP) methods. When using the ROP technique, the attacker does not try to place his code in memory, but operates on existing pieces of machine instructions ending with a return instruction (usually, these are the ends of functions). The exploit's work comes down to building a chain of calls to similar blocks ("gadgets") to obtain the desired functionality.

https://marc.info/?l%3Dopenbsd-cvs%26m%3D172887095204232%26w%3D2

Intel and AMD, with Linus Torvalds, Form x86 Ecosystem Advisory Group:

15/10/2024

Intel and AMD have announced the creation of an advisory group to advance innovation in the x86 ecosystem, including Linus Torvalds and Tim Sweeney , founder of Epic Games and a key contributor to the Unreal Engine. The group also includes representatives from Broadcom, Dell, Google, Hewlett Packard, Lenovo, Meta, Microsoft, Oracle, and Red Hat.

The key objective of the initiative is to work together to ensure

compatibility between platforms, simplify software development for x86 systems, and identify developer needs for extending the architecture. The goal is to support the development of the x86 architecture as a computing platform that is in demand by developers and consumers.

The group is expected to help bring together industry leaders and the interests of both hardware and software communities to shape the future of architecture and provide developers with a more unified set of instructions and architectural interfaces. The group's areas of interest include solutions for data centers, client systems, cloud services, embedded devices, machine learning, and 3D graphics.

The expected outcome is improved compatibility between software and hardware, simplified architectural guidelines and standardized interfaces across Intel and AMD products, and more efficient integration of new hardware capabilities into operating systems, frameworks, and applications.

https://www.intel.com/content/www/us/en/newsroom/news/october-2024-intel-news.html

Rogue Legacy Source Code Released:

16/10/2024

Cellar Door Games announced the publication of the source code for Rogue Legacy , a 2D platformer with roguelike and fantasy elements. The game was released for Windows, macOS, Linux, PlayStation 3/4/Vita and Nintendo Switch. The code is written in C# and is distributed under a specific license that allows compilation and modification for personal use, but requires permission if you intend to distribute your own build of the game.

Only the code without game resources that can be transferred from your copy of the game. The proposed code is designed to use the FNA package with an open implementation of the Microsoft XNA Game Studio 4.0 Refresh libraries. It is also noted that work is underway to port the game to the SDL 3

library.

https://x.com/CellarDoorGames/status/1846246914406195662

Fooyin Music Player 0.8 Released:

16/10/2024

The Fooyin 0.8 music player has been released. It is aimed at providing wide possibilities for customizing and adapting the program to your preferences. Fooyin offers a set of widgets with the implementation of various modes for managing the music collection and playing music. Additional features can be connected in the form of plugins. A configurator for the layout of elements on the screen is offered for customizing the interface. The project is written in C++ using the Qt library and is distributed under the GPLv3 license. Ready-made packages are formed for Fedora, Debian and Ubuntu.

Supported playback of files in FLAC, MP3, MP4, Vorbis, Opus, WavPack, WAV, AIFF, Musepack, Monkey's Audio, VGM and various track formats. Fooyin's capabilities include: extracting information about the order and duration of audio tracks from CUE files, gapless playback, creating, importing and exporting playlists in M3U/M3U8 formats, filtering the contents of the music library by any fields, tree view of the collection, tag editing, visualization using spectrograms, navigation at the directory level in the file system with the ability to directly play selected files. The MPRIS (Media Player Remote Interfacing Specification) D-Bus interface can be used for external control of the player.

https://github.com/fooyin/fooyin/releases

Forgejo 9.0 Collaborative Development Platform:

16/10/2024

The release of the Forgejo 9.0 collaborative development platform has been published . It allows you to deploy a system for collaborative work with Git repositories on your servers,

similar to GitHub, Bitbucket and Gitlab. Forgejo is a fork of the Gitea project , which in turn branched off from the Gogs platform. Forgejo was separated in 2022 after attempts to commercialize Gitea and the transfer of control to a commercial company. The Forgejo project adheres to the principles of independent management and community control. Git hosting Codeberg.org has switched to using Forgejo . The project code is written in Go and is distributed under the MIT license.

The key features of the platform are low resource consumption (can be used on a Raspberry Pi board or in cheap VPS) and a simple installation process. It provides typical project capabilities, such as task management, issue tracking, pull requests, wiki, tools for coordinating developer groups, preparing releases, automating package placement in repositories, managing access rights, interfacing with continuous integration platforms, code search, authentication via LDAP and OAuth, access to the repository via SSH and HTTP/HTTPS protocols, connecting web hooks for integration with Slack, Discord and other services, support for Git hooks and Git LFS, tools for migrating and mirroring repositories. The ability to use the ActivityPub protocol to unite individual developer servers into a federated network is separately highlighted.

https://forgejo.org/2024-10-release-v9-0/

MySQL 9.1.0 Released:

17/10/2024

Oracle has published a new branch of the MySQL 9.1.0 DBMS. MySQL Community Server 9.1.0 builds are available for all major Linux, FreeBSD, macOS, and Windows distributions. As part of the new release model introduced last year, MySQL 9.1 is assigned to the "Innovation" branches, which will also include the next major release, MySQL 9.2. Innovation branches are recommended for those who want to get access to new functionality earlier, are published every 3 months and are supported only until the next major release is published (for

example, after the appearance of branch 9.1, support for branch 9.0 was discontinued). In the summer of next year, they plan to form an LTS release, recommended for implementations that require predictability and long-term preservation of unchanged behavior. Following the LTS branch, a new Innovation branch will be formed - MySQL 10.0.

https://dev.mysql.com/downloads/mysql/

Release of F-Stack 1.24:

19/10/2024

F- Stack 1.24 has been released, a user-space revision of the FreeBSD network stack that uses the DPDK framework to achieve maximum performance. The project was created by Tencent, China's largest telecommunications company, and is used in its products and services. The code is written in C and is distributed under the BSD license. Linux and FreeBSD are supported.

F-Stack allows you to use your own local network stack in applications, independent of the operating system network stack, functioning in the user space and working directly with network equipment. F-Stack is positioned as a solution that allows you to increase the performance of network request handlers in conditions where the standard TCP/IP stack of the Linux kernel becomes a bottleneck and limits scaling - in some situations, the project makes it possible to increase the number of small network requests processed several times. Theoretically, F-Stack allows you to reach the ceiling of network performance possible for the network card used.

Increased performance is achieved by eliminating such operations as copying network packets, scheduling threads, processing interrupts, and using system calls. To interact with the network card, bypassing the operating system kernel interfaces, the DPDK (Data Plane Development Kit) framework is used, which develops a set of libraries for low-level work with network adapters. DPDK makes it possible to reduce overhead costs and keep to a minimum number of CPU cycles

when receiving or sending network packets.

The project supports F-Stack-converted versions of the Nginx 1.25.2 multiprotocol server and Redis 6.2.6 DBMS, which demonstrate performance superior to regular builds running on top of the system network stack.

https://github.com/F-Stack/f-stack/releases/tag/1.24

Ubuntu Linux Distribution Turns 20:

20/10/2024

Twenty years ago, on October 20, 2004, the first version of the Ubuntu 4.10 "Warty Warthog" distribution was published, based on Impi Linux. The project was founded by Mark Shuttleworth, a millionaire South African contributor to Debian who was inspired by the idea of creating an accessible desktop distribution for end users with a predictable, fixed development cycle. Several developers from the Debian project were involved in the work, some of whom are still involved in both projects. The Ubuntu 4.10 release, which shipped GNOME 2.8, Firefox 0.9, and OpenOffice.org 1.1.2, remains available for download and can be used to evaluate what the system looked like 20 years ago.

https://lists.ubuntu.com/archives/ubuntu-announce/2004-October/000003.html

CoreBoot-based solutions for systems with Intel Xeon 6 processors:

20/10/2024

Intel has announced efforts to add support for platforms based on Intel Xeon 6 ("Granite Rapids") processors to the CoreBoot project, which develops a free alternative to proprietary firmware and BIOS. The work is being carried out jointly with 9elements, a company specializing in adapting CoreBoot to various equipment. CoreBoot plans to prepare an FSP (Firmware Support Package) package, including the

implementation of procedures necessary for initializing and configuring systems with Intel Xeon 6 processors.

It is expected that the work carried out will make CoreBoot-based solutions more attractive for corporate systems and bring them to the level of Open Platform Firmware (OPF) projects from the Open Compute community. It is noted that the use of CoreBoot will enable companies to simplify the hardware initialization process, reduce maintenance costs and adapt the boot components to their needs, which is especially important when implementing software-defined infrastructures (SDI , Software-Defined Infrastructure) in data centers.

Intel also mentions that CoreBoot enables high performance, efficiency, and security of workloads, and promotes innovation and collaboration across the industry. CoreBoot achieves higher performance than proprietary UEFI firmware due to its minimalist, modular architecture that initializes only the necessary hardware components. CoreBoot also reduces boot times by using LinuxBoot to directly transfer control to the Linux kernel, without the need for additional boot loaders or firmware.

https://community.intel.com/t5/Blogs/Tech-Innovation/Data-Center/Advancing-Open-Source-Firmware-on-Intel-Xeon-6-Based-Platforms/post/1636720

Laptop maker Malibal attacks CoreBoot project:

20/10/2024

Malibal, a laptop company, has harshly criticized the CoreBoot community and called for the project to be stopped. In addition, Malibal has refused to use AMD processors, since the CoreBoot leader is employed by AMD, and has stopped supplying products to Germany, Poland, and Texas, since 9Elements, AMD, and 3mdeb are registered there, and Malibal representatives were unhappy with their interactions with them. Moreover, Malibal has promised to ban anyone who supports the CoreBoot project, transfers code to it, sends donations, or participates in its work. A Malibal representative

also complained about the high cost of consulting services related to CoreBoot, and stated that in more than 6 months of joint work, not a single line of code has been written related to the adaptation of CoreBoot for Malibal laptops.

The leader of the CoreBoot project expressed surprise at such attacks, since Malibal had not paid anyone a penny, no contracts had been concluded with it, and no technical specifications had been drawn up. All interaction had been reduced to a free analysis of the wishes and work already done in Malibal, after which the companies involved in consulting related to CoreBoot simply refused to work with Malibal.

Christian Walter, head of firmware development at 9elements and founder of the OSFW Foundation, apologized for the possibility that his participation in the discussions might be perceived as arrogance (English is not his native language and he often answers from his phone, which leads to messages with typos), and clarified some technical details.

Malibal's claim that they provided a ready-made solution that only needed debugging is not true, as the firmware version sent was not working and did not boot on the laptop provided. 9elements employees had to compile and install the firmware themselves in order to boot the laptop with it, and, apparently, the firmware provided had never been booted on the device before, i.e. the code provided had never been tested in operation.

After loading, the suspicion was confirmed, the firmware turned out to be non-working and the board did not exit the reset state, i.e. there was no talk of any final debugging at this stage of firmware development. The 9elements company did not take any money for the manipulations carried out with the proposed firmware, i.e., in fact, it carried out a free examination, and returned the sent device. The correspondence archive and conversations are saved and Christian is ready to provide them as evidence of the groundlessness of Malibal's statements.

https://www.malibal.com/features/dont-support-the-coreboot-

project/

ubuntu uk podcast

The Ubuntu Podcast covers all the latest news and issues facing Ubuntu Linux users and Free Software fans in general. The show appeals to the newest user and the oldest coder. Our discussions cover the development of Ubuntu but aren't overly technical. We are lucky enough to have some great guests on the show, telling us first hand about the latest exciting developments they are working on, in a way that we can all understand! We also talk about the Ubuntu community and what it gets up to.

The show is presented by members of the UK's Ubuntu Linux community. Because it is covered by the Ubuntu Code of Conduct it is suitable for all. The show is broadcast live every fortnight on a Tuesday evening (British time) and is available for download the following day. podcast.ubuntu-uk.org

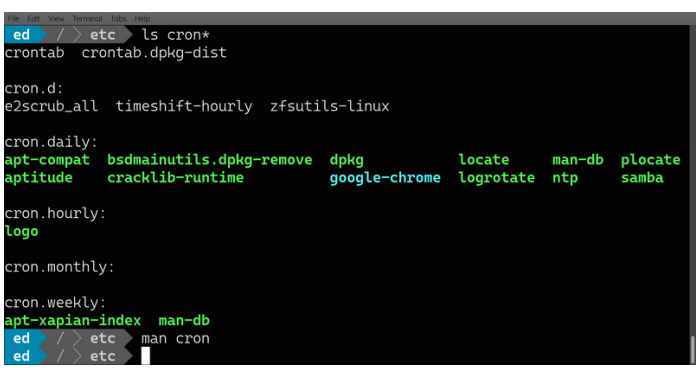
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Command & Conquer: Samba

Sorry guys, been spending the month in the hospital, so I'm doing this month's command and conquer from my other computer. This means I cannot remember where we were precisely, so rather than re-doing something we have done, or skipping something, let's skip to another part of the LPIC exam people have issues with.

Cron:

So if you ever typed 'man cron', you may be bombarded with information, and tried to automate something in Ubuntu. Aaaaand found it did not work. This is because Ubuntu has a slightly different take on cron. That said, the principles are still the same. If you look in your /etc folder, you will notice that Ubuntu has more than one folder named cron. Type cd /erc/ cron. - and tab to complete to see them.



Cron runs only when the computer does, so if you close your laptop and it hibernates or sleeps, cron does not run. You may have noticed that the files inside *my cron.daily folder, in the image, is green. That is because if the files in there are not executable, they do not run. (Sounds logical, but you would be surprised at how often it bowled someone over).

We can do a quick example by making a script, and putting it in one of the folders, and see if it runs. Just keep in mind that this method does not give one fine-grained control. By this I mean, the file I put in the daily folder will run every day, but I cannot tell it to run at, say, ten to four in the morning. For that we use another method.

Open your favourite editor and let's make a simple script:



Save it, make it executable with chmod +x and we are ready to go. Always test your scripts first. Once you know it works, remove the folder it created and let's pop it into cron.hourly.

Now continue to enjoy your free magazine and you can check it again in an hour. This is an easy way to run scripts, however if you take the LPIC exam, they will want to know if you can remember the minute, hour, day of month, month, day of week. In Ubuntu, it is visible in a helpful comment, but for the exam, they will not give it to you, instead wanting you to remember the order. You can use a mnemonic, like my house of dominoes mowed down, to remember it. If you have trouble visualising how the numbering works, I suggest playing online with crontab guru: *https://crontab.guru/*

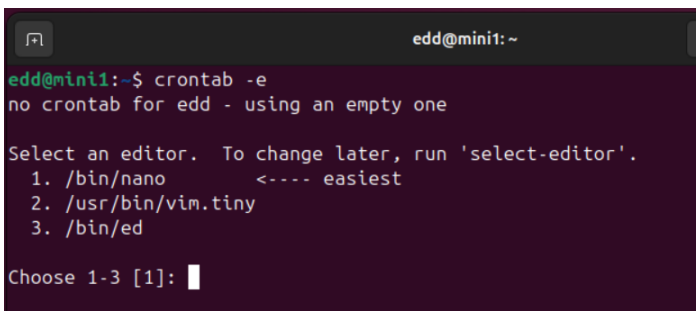


At the bottom of the page, you will see "examples" – I suggest you look closely at those as I recall examples in the test were exactly what you saw there.

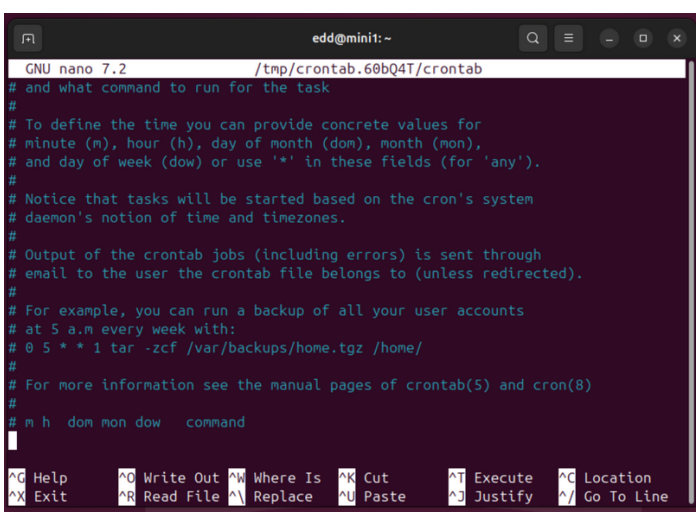
Let us use this time to do something with crontab (Cron table). Please remember that crontab is different per user. You can specify the user with the tack: -u For now, I want you to do this

with your own user or a test user on your system. If your system has a file named /etc/cron.allow (deny is also valid), and you are not listed in there, you will not be able to run crontab. For other users you can do it like this: crontab -u seconduser -e (make sure the user exists, so spell correctly!). This is mainly used when you need to run something as root (be careful! And remember you need sudo).

Please type crontab -l first to see if you have an existing file created.

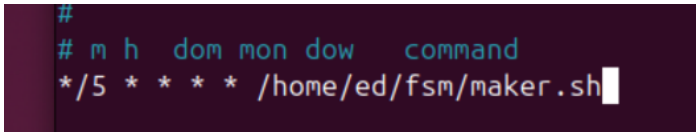

edd@mini1: ~
edd@mini1:~$ crontab -e
no crontab for edd - using an empty one
Select an editor. To change later, run 'select-editor'.
1. /bin/nano <---- easiest
2. /usr/bin/vim.tiny
3. /bin/ed
Choose 1-3 [1]:

The choice here is up to you, but as it is a newbie tutorial, I'm going with nano.


edd@mini1: ~
GNU nano 7.2 /tmp/crontab.60bQ4T/crontab
and what command to run for the task
#
To define the time you can provide concrete values for
minute (m), hour (h), day of month (dom), month (mon),
and day of week (dow) or use '*' in these fields (for 'any').
#
Notice that tasks will be started based on the cron's system
daemon's notion of time and timezones.
#
Output of the crontab jobs (including errors) is sent through
email to the user the crontab file belongs to (unless redirected).
#
For example, you can run a backup of all your user accounts
at 5 a.m every week with:
0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
For more information see the manual pages of crontab(5) and cron(8)
#
m h dom mon dow command
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line

Here in this Image, you can see the helpful "m h dom mon dow command" in the comments.

We edit it like so:



Now every 5 minutes, my script will run.

The other way you need to know is using at (where de scripts at? - just kidding).

What you need to know for the exam:

There is an 'at daemon' running in the background, atd, that will check the job queue for jobs to run. The other thing that comes up that you need to know is that the 'at' command submits the job to that very queue. Other than that, it did not go into detail. You may have noticed that there is no man entry for 'at' in Ubuntu as it is not installed by default. (It is not difficult to install). So, if you want to know more, I'll be pointing you to the interwebs as I have limited space in the magazine: *https://www.geeksforgeeks.org/at-command-in-linux-with-examples/*

Because things change in exams, and the last time I gave a class in this, it was two exam versions ago, I'd just like to point out that 'at' does not only consist of 'at' and its daemon, there are other files involved, namely:

- */usr/bin/at*
- */usr/bin/atq*
- */usr/bin/atrm*
- */usr/bin/batch*
- */usr/sbin/atd*
- */usr/sbin/atrun*

Since the LPIC course is distro agnostic, I'd suggest you file these away somewhere that you can recall them if needed.

The whole 'running a command or script at a certain time' is

not hard, but the LPIC exam guide did a poor job of explaining this easy topic, instead making it seem as difficult as possible, explaining from the arse end up. My suggestion is do it, get used to it, and you will not forget it.

A favourite of mine for homework, was to get students to play a gong wave file every hour via cron. I suggest you try and do that too, then maybe make it play every hour and one minute and so forth, making a game out of it will make it stick much better than any Youtube video will.

As always, if I made a mistake: *misc@fullcirclemagazine.org*

***Erik** has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.*

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HowTo: Python in the REAL World - Part None

Written by Greg Walters

Time for a sabbatical

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra are changing in ways that I never thought they would. By the time you read this, I will be on my way to a location in Tau Ceti. The request (read mandate) just came in from the Galactic Council requesting me (read demanding me) to attend a conference to attempt to help broker peace talks between the Gozorn and the Trasforiua. No easy task, that. Unfortunately, due to the distance and time in the talks, my ability to work on my articles will be sorely cut short. Even my Discord help will be cut by a major percentage. (Thankfully, Discord is supported on ansible: *https://en.wikipedia.org/wiki/Ansible*). Wikipedia has it mostly right.

So, for the foreseeable future, I will be pretty much off line. My hope is that I will be able to return to Terra sometime about January 2025.

So, until then, as always; stay safe, healthy, positive and creative!

Crazy Uncle Greggggie

Greg Walters *is a retired programmer living in Central Texas, USA. He has been a programmer since 2002 and in his spare time, he is an author, amateur photographer, luthier, fair musician and a pretty darn good cook. He still is the owner of RainyDaySolutions a consulting company and he spends most of his time writing articles for FCM*

and tutorials. His website is www.thedesignatedgeek.xyz

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HowTo: USB Drive Share via a Router

Written by Alan German

Recently, a suggestion was made that there should be a Full Circle tutorial on setting up a simple home network to exchange files between machines. My solution for this is to plug a flash drive into a USB port on my ISP's modem-router unit, and then share this drive over the Wi-Fi network. The amount of available storage is much less than what might be obtained with full-blown network attached storage (NAS), but the flash drive is much less expensive, the capacity suitable to my needs for occasionally transferring a few files, and setup for multiple operating systems is really simple.

My Bell Giga Hub modem-router features two external USB ports, and I initially wondered if I could use one of these to host a USB drive and make this available over the wireless network. An Internet search very quickly identified that such connectivity was indeed possible and provided the necessary instructions for its implementation.

When a USB drive is plugged into the Giga Hub modem, a network share is created automatically, and a connection can be made to the drive using the modem's IP address. This IP address is also the one used to log in to the router's administration interface in order to change any of the unit's settings. To display this IP address, the command ip route can be used. For my system, this confirmed the default IP address for the modem as 192.168.2.1.



Micro-USB drive plugged into the Giga Hub modem-router

The network connection can be made using the Server Message Block (SMB) protocol, normally referred to as Samba. For Linux Mint, which is my current distro of choice, SMB client support is included by default and allows access to SMB shares over the network.

Furthermore, I subsequently discovered that a USB share using the IP address could be accessed from Linux, Android, and Windows. Consequently, my home Wi-Fi now provides me with a micro-version of a NAS system that I can access from any of my computers when booted into either Linux or Windows, and from Android smartphones and tablets.

For anyone who has similar hardware and wishes to set up a USB share, the procedures for the three operating systems are provided below. The example uses a 64-GB nano-USB drive with the device name 64gbnano, but it will be obvious how to customize the commands for another system.

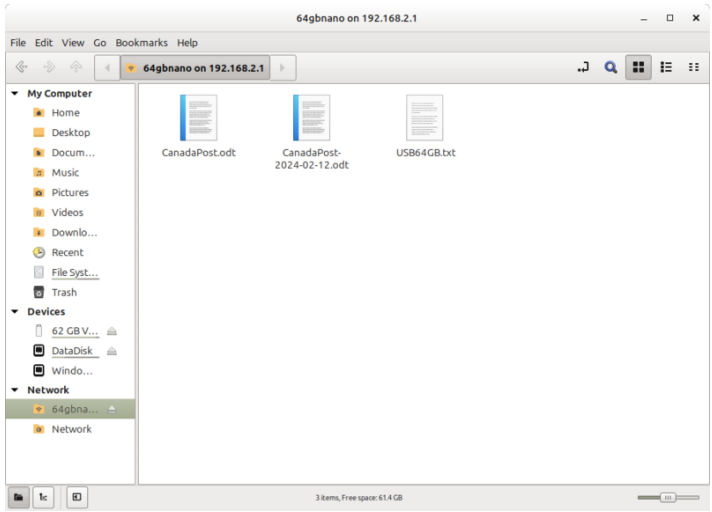
Linux Mint:

In the address bar of Nemo, the file manager for Linux Mint, toggle the location entry (Ctrl-L) to allow text entry. Now, type

[redacted]

and press Enter. A dialogue box will open requesting

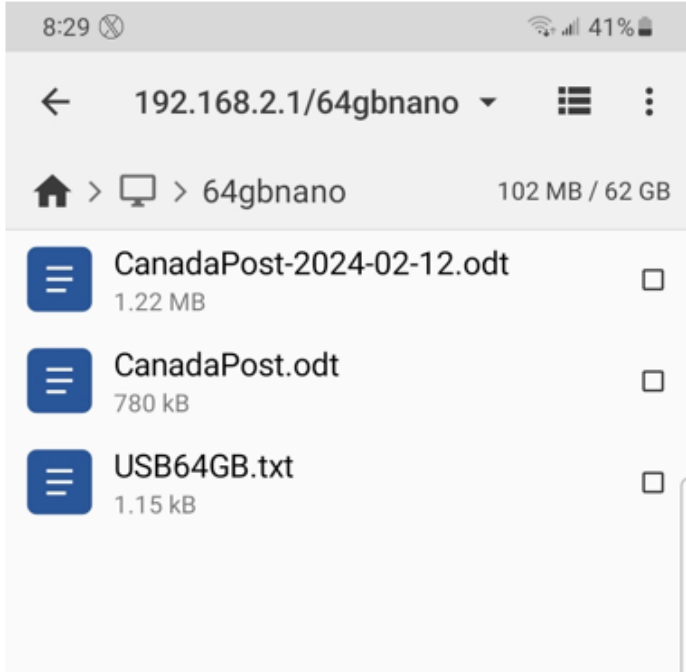
authorization. Click on the radio button to connect as Anonymous and press Connect. Nemo will now display the files in the network share.



Network Share 65gbnano in Nemo

Android 11:

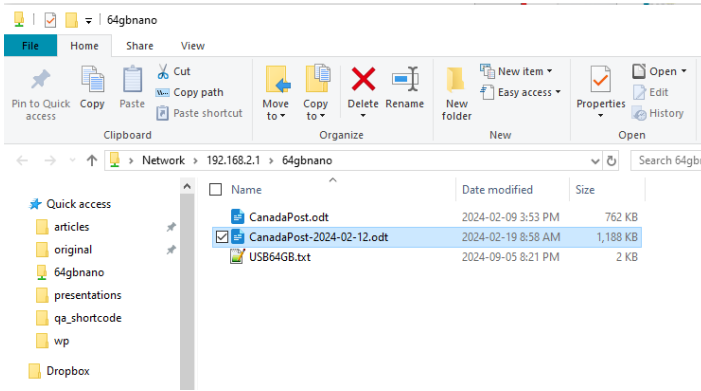
Using the Cx File Explorer file manager (*https://play.google.com/store/apps/details?id=com.cxinventor.file.explorer*), navigate to NETWORK > New location > REMOTE > SMB. Enter 192.168.2.1/64gbnano as the Host, check the box labelled Anonymous, and press OK. The file manager will now display the contents of the USB drive



USB Drive Contents in Android's File Manager

Windows 10:

In the search box on the taskbar, type Run. In the text box labelled Open, type \192.168.2.1\64gbnano and press OK. Note that, for Windows, backslashes are required in the IP address. File Explorer will now open and display the contents of the USB drive.



Network Share 65gbnano in File Explorer

Conclusion:

Using this technique, a reasonably-sized USB drive can be used as network attached storage for a home Wi-Fi system. Furthermore, the use of a micro-USB drive makes this drive fairly unobtrusive. The network share allows access to the same set of files for all connected devices and provides a ready mechanism to wirelessly copy files between these devices.

HowTo: Latex - CTAN

Written by Robert Boardman

This issue will continue our examination of the topics in CTAN. This time, we will explore a few of the packages indexed in the "C" area. (Remember ctan.org is the repository for packages designed for Tex/Latex.) There are more than 50 topic names starting with "c". Nine of them offer support for specific languages (Catalan, Chinese, Cherokee, Croatian and others). I chose two packages out of more than 50 in the calculation topic, and three packages out of 27 from the calendar topic. All should be available to any user of a standard installation of Latex.

The basicarith package has 14 pages of documentation. The abstract says *"the basicarith package provides means for typesetting arithmetic problems, of whatever operations, in a clean and open fashion, suitable for educational texts rather than scholarly works."* This package would have been useful when I was teaching mathematics.

Note: this package does not solve problems for you, it does not convert Latex to a calculator. It typesets problems with answers as they could appear in a text.

Note: the typesetting is done to textbook standards commonly used in North America and parts of Europe. Your location may require different notation. The joy of open source software is you can read and edit the package to suit your requirements. Then submit your version to ctan.org for inclusion. Here is the code used to produce the first figure.



Some examples of problems at various levels of knowledge. I

walked 3,300 paces and each pace is 75cm. How far did I walk in metres?

Some examples of problems at various levels of knowledge.

I walked 3,300 paces and each pace is 75cm. How far did I walk in metres?

$$\begin{array}{r} 3\,3\,0\,0 \\ *\,7\,5\,\% \\ \hline 2\,4\,7\,5 \end{array}$$

How far did I walk in kilometres?

$$\begin{array}{r} 2\,.\,4\,7\,5 \quad \text{R}\,0 \\ 1\,0\,0\,0\,\overline{)\,2\,4\,7\,5} \end{array}$$

Of course, addition is not restricted to problems with only two numbers.

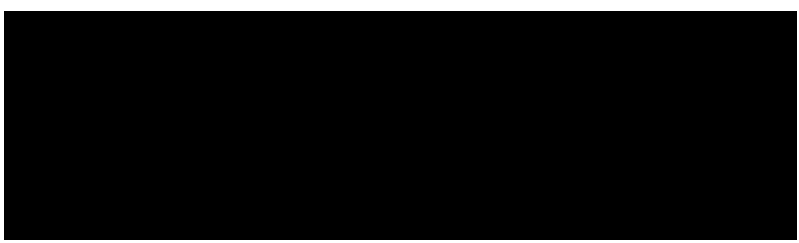
I bought a dozen eggs for $4.59, three litres of milk at$4.29, 2kg of apples for $3.99 and 500g of meat for $8.43. How much did I spend on groceries?

$$\begin{array}{r} 4\,.\,5\,9 \\ 4\,.\,2\,9 \\ 3\,.\,9\,9 \\ +\,8\,.\,4\,3 \\ \hline 2\,1\,.\,3\,0 \end{array}$$

basicarith package

Center the solution as it would normally appear in a textbook.

$$\begin{array}{r} 4\,.\,5\,9 \\ 4\,.\,2\,9 \\ 3\,.\,9\,9 \\ +\,8\,.\,4\,3 \\ \hline 2\,1\,.\,3\,0 \end{array}$$



Of course, addition is not restricted to problems with only two numbers.

I bought a dozen eggs for $4.59, three litres of milk at$4.29, 2kg of apples for $3.99 and 500g of meat for $8.43. How much did I spend on groceries?



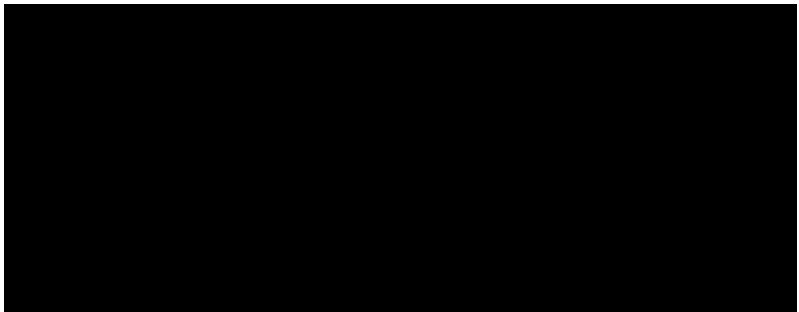
Of course there are other tools and options in this package. Please read the documentation and experiment before you need to use basicarith in your work.

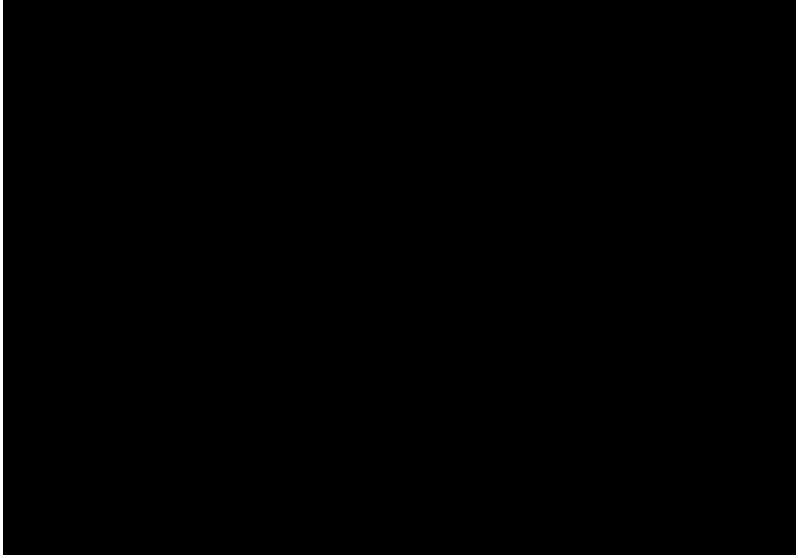
The next package is calculator. The 87-page documentation covers both calculator and calculus packages. The first 30 pages describe various capabilities of calculator and calculus. The remaining pages show the macro code which will be useful to developers. Calculator *"allows us to use Latex as a calculator with which we can perform many of the common scientific calculations...apart from add, multiply or divide, we can calculate powers, square roots, logarithms, trigonometric and hyperbolic functions"* (from the abstract to the documentation). This package not only typesets equations, it also solves them within the limits of Tex arithmetic. There are worked examples throughout the documentation. Calculations can be chained together so the result of one can be used in the calculation of the next.

The first example from the calculator package documentation.

$$\begin{aligned}\frac{2.5^2}{\sqrt{12}} + e^{3.4} &= \frac{6.25}{3.4641} + 29.96432 \\ &= 1.80421 + 29.96432 \\ &= 31.76854\end{aligned}$$

As you can see from the figure, Tex math seems to be limited to five decimal places of accuracy. What is not apparent from the figure, but which is visible in the code, is the package amsmath needs to be used with calculator.





Calculations can be done with integer and real numbers (including exponents), natural logs (base e is the default, although other bases can be used), plus regular, inverse and hyperbolic trigonometric functions in both radians and degrees. Some simple matrix and vector math can also be done.

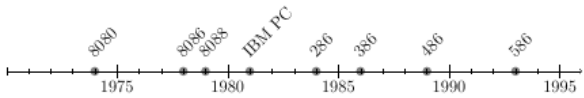
The calculus package includes features that typeset and solve: linear, quadratic, cubic polynomial functions, trigonometric functions, vector-valued functions, in Cartesian and polar coordinates and others.

I could use up several columns exploring some of the many possibilities of calculator and calculus. If you have a need for typesetting simple and complex equations in Latex, I strongly recommend you read the documentation carefully and experiment. There are many opportunities for good results and for mistakes.

Now I will move on to some packages in the calendar topic.

The chronology package makes timelines. This is easy to do with pen and ruler, not so easy with a word processor or spreadsheet. The chronology package makes the task very simple. It has a limited set of instructions in the four-page documentation. I chose to use the simplest set of commands to make a timeline of the development of one line of CPU chips. The code is below, refer to the figure for the result. As always, I

encourage you to read the documentation to learn about several other possibilities.



chronology package



The last package in this instalment is termcal. According to the documentation, termcal *"is intended to print a term calendar for use in planning a class."* After reading the documentation, I suggest the last part of this sentence should read "for use in planning a semester." This is not a tool to help teachers do lesson plans but a tool to help students plan their work for a semester.

Instructions start with \calendar{start date}{number of weeks}. For my example, I will use Oct 9, and 10 weeks. (Dates have to be written in mm/dd/yy order. Only digit years are accepted.) The size of the boxes is set with the \calboxdepth and \calboxwidth instructions. (This is similar to setting the size of cells in a table.) These are followed by \calday which indicates

which days are to be printed, and \skipday which shows which days do not need to be printed since they have no events.

Text can be added to dates using the \caltext{date}{text} instruction. Events can also be entered using the \caltexton{day number}.The day number is indicated in the top-right corner of each date. Note the syntax used to get the example results: back-slash, space, two back-slashes (to indicate new line), required text. This syntax is not in the documentation. The documentation is not clear, and not helpful at several points. Perhaps this is to be expected since the documentation was last revised in 1996. I suspect the differences between what the documentation says should work and what actually works are probably due to the age of the package and that Latex has had a major upgrade since 1996.

An example of the use of the termcal package

Monday	Tuesday	Wednesday	Thursday	Friday
Oct 7th **1**	8th **2**	9th **3**	10th **4**	11th **5**
14th **10** Thanksgiving	15th **6**	16th **7**	17th **8**	18th **9**
21st **10** Quiz	22nd **11**	23rd **12**	24th **13**	25th **14**
28th **15**	29th **16**	30th **17**	31st **18**	Nov 1st **19**
4th **20** Quiz	5th **21**	6th **22**	7th **23**	8th **24**
11th **25**	12th **26**	13th **27**	14th **28**	15th **29**

That is all for this column. There are many more topics starting with “C”. I may decide to tackle a few more of them next time, or I may move to the “D” topics. Read the next issue and find

out. As always, if you have a task or topic you want me to discuss please send me or the editor a note and I will do my best.

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KILOBYTE
MAGAZINE
Kilobyte Magazine is a fanzine for 8bit enthusiasts. It covers consoles, computers, handhelds and more, as well as new games for old systems. If you grew up with Commodore, Atari, Sinclair or Amstrad, this magazine is for you.
https://retro.wtf/kilobytemagazine/

HowTo: Drawing with Inkscape - Part 150

Written by Mark Crutch

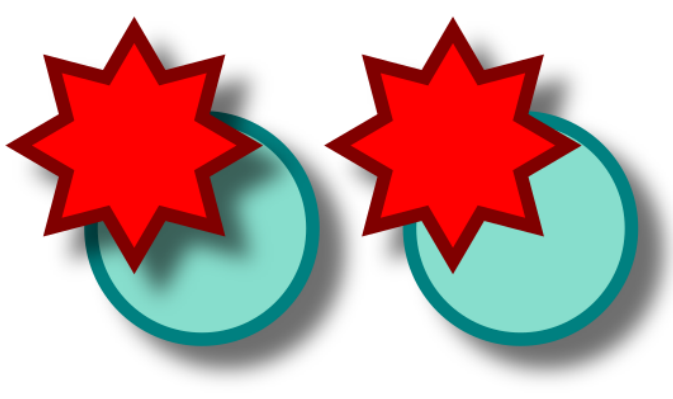
The last change in Inkscape version 1.3 that I'm going to cover in these articles is described as follows in the release notes: "The Filter Editor has been overhauled and is now easier to use!" Well, it's definitely been overhauled. As to whether or not it's easier to use… I'll just describe the functionality and let you decide that for yourself.

I first covered the Filter Editor dialog back in part 48 of this series (FCM #108). I then spent a further 9 issues detailing each of the individual filter primitives. Despite the overhaul in the Filter Editor's UI, those details still mostly apply – so if you want to revise your filter knowledge, I suggest reading those articles as well. That first article described how to create a simple filter chain for a drop shadow effect so, at the risk of repeating myself over 100 issues later, I'm going to do the same with the new editor.

In practice, I recommend using the Filters > Shadows and Glows > Drop Shadow… dialog for creating drop shadows on a day-to-day basis. The end result is a slightly different filter chain to the one we'll be creating here, but it's a quicker, easier, and more flexible option for most purposes. However, with the knowledge gained from creating your own filter chain from scratch, it will be easier to tweak Inkscape's built-in offerings via the Filter Editor dialog, should you need to.

A filter is applied to one or more objects, either individually or contained within a group. It's important to understand the difference: when a filter is applied to a group, it's as though the entire contents of the group is flattened down to a single object before the filter is applied. This image shows the same shapes with the same drop shadow applied, but the pair on the left are

separate elements, whereas the pair on the right are grouped together, with the filter being applied to the group.

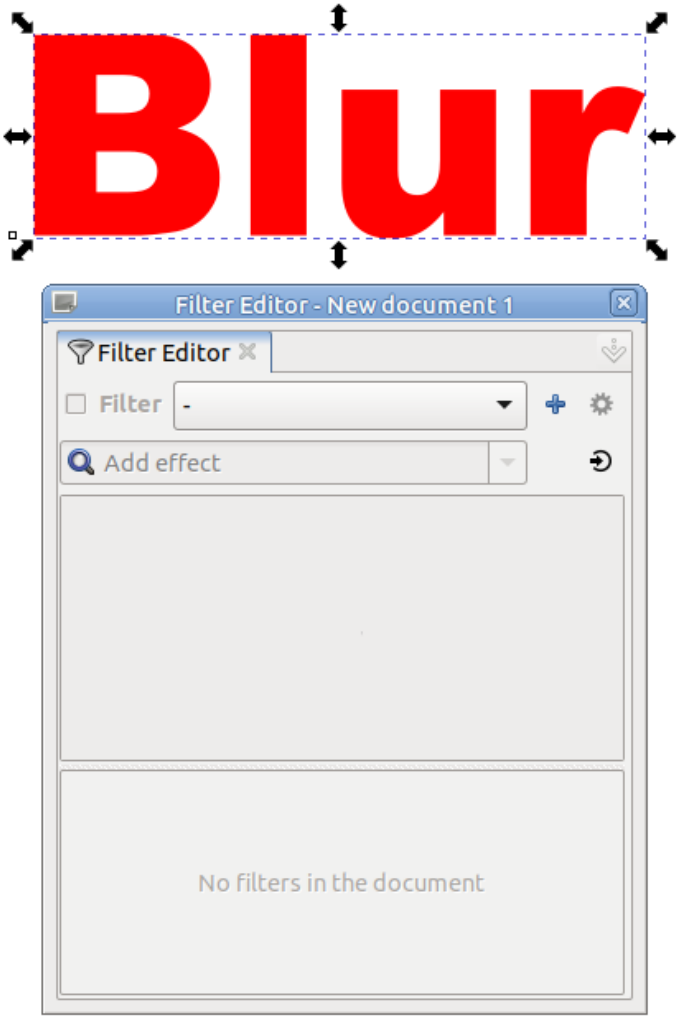


Of course you're free to mix things up further, applying filters to objects before grouping them and adding another filter to the group itself, for example. Sometimes there are good reasons for creating such complex arrangements, but do bear in mind that filters come at a cost. They are calculated 'live', which gives you the advantage of being able to tweak their parameters later, but which can chew up computing power very easily once too many, or too complex, filters are applied to the drawing. For our simple drop shadow example, however, speed isn't likely to be too much of a concern.

Since a filter is applied to an object or group, we'll first need to create something. Following the example in my old article, I'm going to work on a bold and colorful text object. First a reminder of how the Filter Editor dialog was arranged in earlier versions of Inkscape.



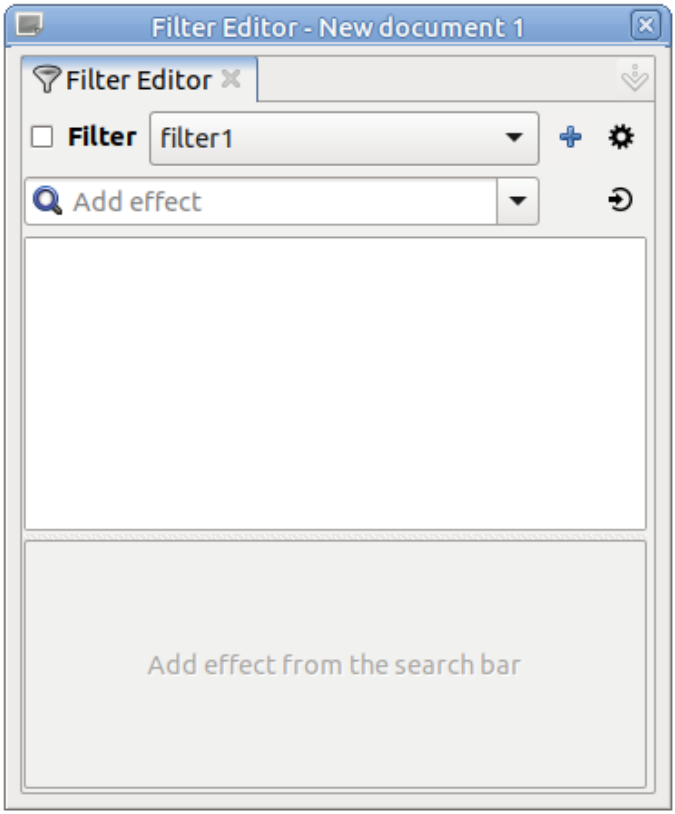
And now the new layout, in version 1.3. There's also an alternative layout which is automatically used if your dialog is wide enough, but, in my opinion, it puts the panels in the wrong order (the parameters for the selected primitive on the left, and the filter chain containing the list of primitives on the right – breaking the usual left-to-right flow of a parent-child relationship in the UI). Therefore, I'll stick to the vertical layout in this article.



Neither of these is particularly intuitive, but the old dialog at least had the benefit of a fairly large button labelled ‘New’ to hint at your starting point. The equivalent in the new design is the much smaller ‘+’ button towards the right of the top row of controls. Good luck if you’re using the symbolic icons, where this looks even less obviously like a button!

Clicking that ‘+’ button creates a new filter with an automatically generated name (‘filter1’ in this image), and activates a little more of the UI. The text on the bottom panel

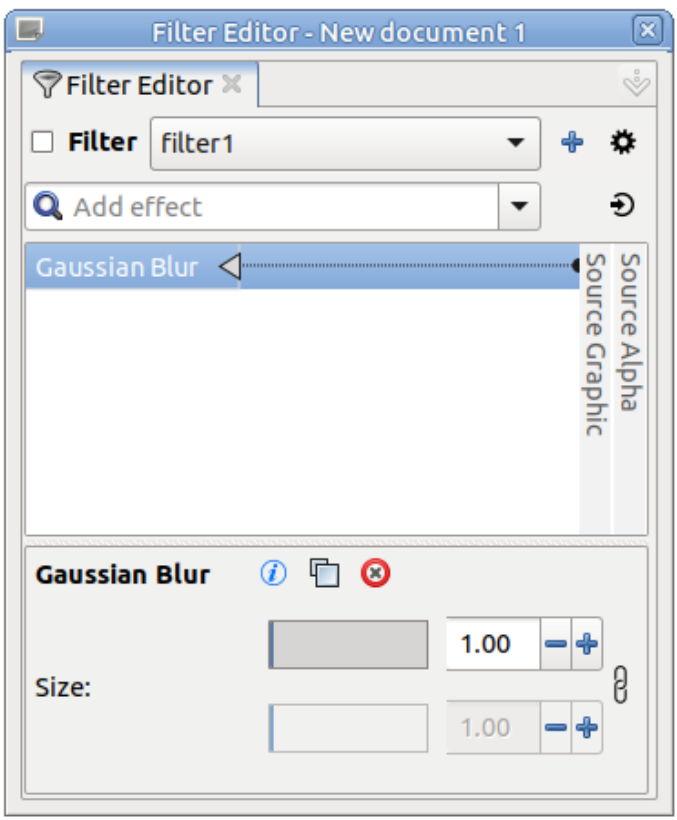
becomes slightly more helpful, telling us to add an effect from the search bar. The search bar in question is the drop-down with the magnifying glass icon and the ‘Add effect’ placeholder text.



This search bar actually works in two different ways, which can be a little confusing at first. For most users, I recommend opening the pop-up by clicking the down-arrow at the right. The result is a categorised array of the filter primitives, each with a small icon that sort-of represents what it does. The icons aren’t always of much use in determining which primitive is which: the ones that I mix up the most (Blend, Merge and Composite) all share the same icon! But I find it’s useful to see all the primitives at once to help reassure myself that I’m picking the right one amongst all the options.

The second mode kicks in if you type into the field. This presents a vertical list of primitives, filtered by the text you type. If you absolutely know you want the Gaussian Blur primitive, for example, typing ‘blur’ or even just ‘ga’ will be enough to restrict the list to the one you want.

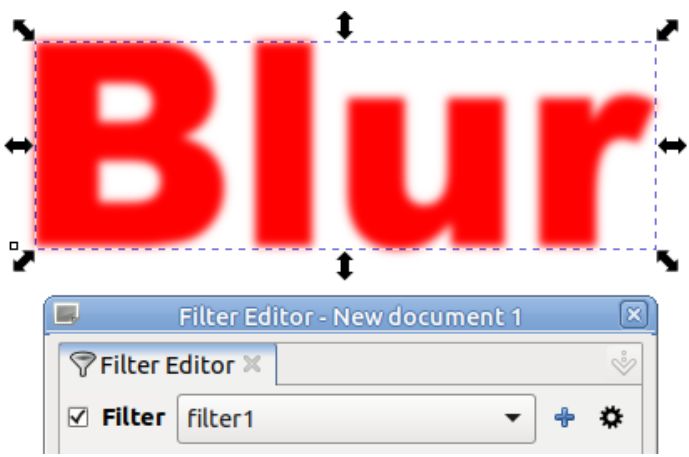
Whichever approach you take, select the Gaussian Blur primitive to add it to your filter chain. The main panel will now be updated to show the primitives in your chain (just the one, so far), while the bottom panel shows the parameters for that primitive.



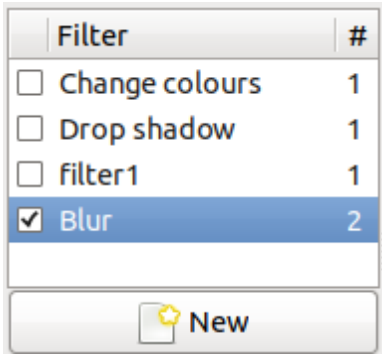
Although the controls in this section will vary depending on the primitive, they all share the three icon buttons that are shown next to the name. Clicking the first opens a small pop-up, which contains some additional information about the

primitive. The other two will duplicate or delete the primitive, respectively. In the older editor, these existed only on the context menu in the editor pane (where they can also still be found). It's good that these have been more obviously surfaced in the UI, though my build does not show tooltips for either of them: although the icons make their function fairly obvious, it's still reassuring to be able to see a textual representation of their purpose.

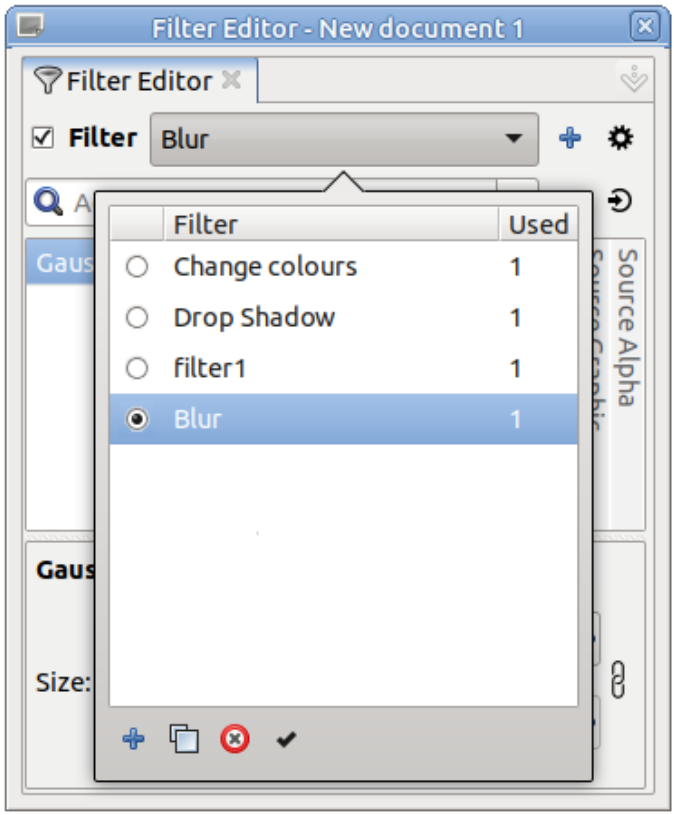
At this point, we have a valid filter chain, but our text still looks as un-blurred as ever. This was a shortcoming of the old editor as well, but it would have been nice if the new redesign had gone so far as to automatically associate the filter with the object we had selected when we created it. To make this association, we have to manually click the checkbox next to the word 'Filter' on the top line – and voila, we have blurred text.



The old dialog showed a list of all the filters in the document on the left, with a checkbox to indicate which one applied to the selected object, and a count of the number of objects in the document which use that filter. Changing the name of a filter was done by double-clicking on it to edit it in-place, and there was a context menu for duplicating and deleting filters.



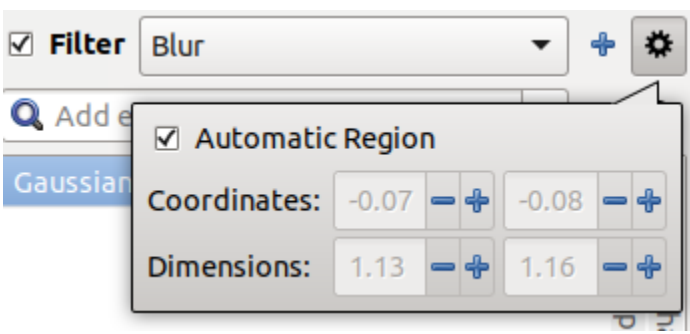
The ‘Filter’ pop-up in the new dialog offers the same options, now with more obvious buttons (still with no tooltips though). Renaming just requires a single click on the filter name to enter editing mode, and the currently active filter is shown more correctly using radio buttons rather than checkboxes.



The ‘check’ or ‘tick’ button is worth drawing attention to specifically. The lack of a tooltip had me puzzling over its purpose, since it didn’t seem to assign the selected filter to the current objects as you might imagine from its visual association with the checkbox in the main dialog. What it actually does is the exact opposite: given a selected filter in the pop-up, it selects all the objects on the canvas that use the filter. This is a great addition that I’ve wanted for years, to aid with de-duplication of filters in complex drawings – it’s just a shame that it’s got an ambiguous and nondescript icon with no tooltip.

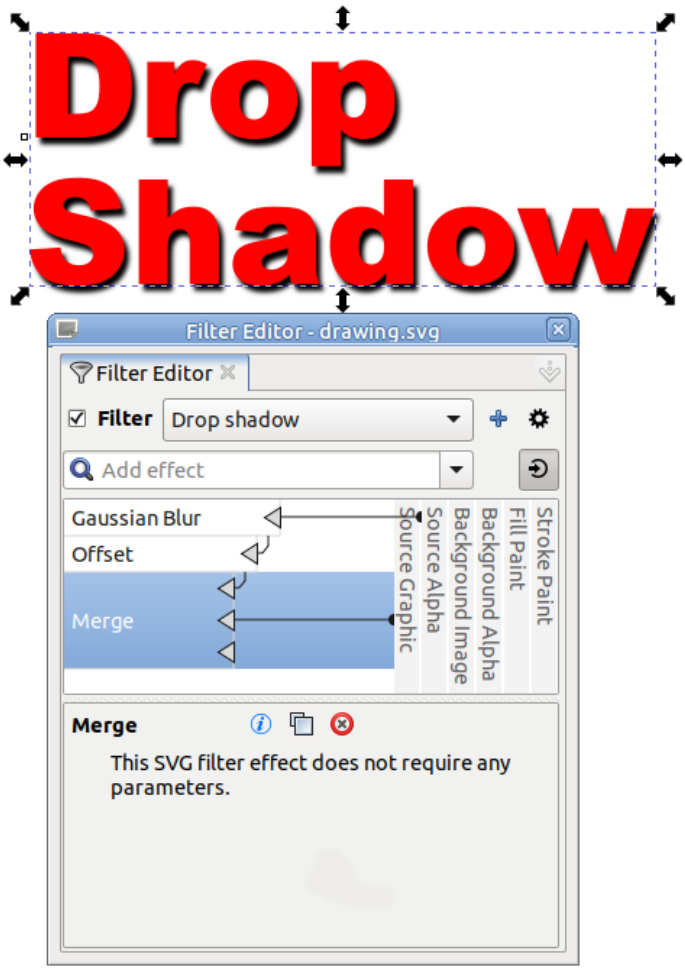
At this point, you can rename your filter to something more descriptive (“Blur”, or “Drop shadow” as that’s where we’re going with it), and you can play around with the sliders in the bottom panel to adjust the amount of blur applied to the text.

Inkscape veterans may be wondering where the old ‘Filter General Settings’ tab has gone to. This is used to set the maximum size of the filter area, and sometimes has to be adjusted to stop filters being clipped. It now lives behind the cog icon at the right of the top row of controls, but can probably be left set to ‘Automatic Region’ unless you have a specific clipping issue.



Also missing for old-timers are the various sources listed to the right of the main editing panel, with only ‘Source Graphic’ and ‘Source Alpha’ being visible by default. The other options are still available, and can be toggled with the button next to the Search Bar. But to be honest, they’re either tricky to use or downright broken in Inkscape – and always have been. Much as I would love to see the underlying issues addressed to make

these more useful, hiding them by default is definitely the best option for most users. In fact I would have gone a step further, and had the toggle button inside the ‘cog’ pop-up, where it would be less likely to tempt unsuspecting users.



The actual details of creating a filter chain haven’t really changed, unfortunately. We’re still stuck with a list-based view of the filter primitives which feels restrictive and archaic compared with the ‘node editor’ approach that is common for similar tools in other products. There’s no technical limitation with SVG that prevents Inkscape having such a UI but it would

be a huge undertaking – so unless some intrepid developer with lots of free time wants to give it a go, I think we'll be looking at minor variations on this list for a long time to come.

Given that this part of the UI remains mostly the same, I'm going to rattle through the remaining steps of our drop-shadow filter quite quickly. See those older articles if you need a slower introduction.

For the basic sort of drop-shadow we want, the shadow needs to be a blurred version of the object with a black fill, not the bright color we're currently seeing. The classic answer to this, in filter terms, is to drag the handle from the triangle next to the Gaussian Blur filter, over to the right, dropping it on the Source Alpha column. That causes the input to our blur to be taken from the transparency of the object which, in practice, means that filled pixels in the source end up as black pixels in the alpha. It's a quick way to turn our red blur into a black blur.

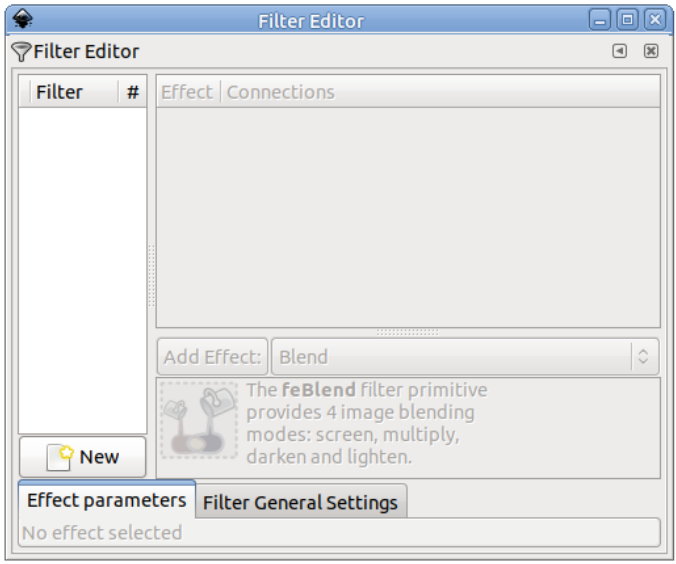
Since this blurred version will be the shadow, we need to move it from its original position. This is done by adding an Offset filter primitive to the chain by selecting it via the effect search bar. My brain always wants to click the '+' button, but that adds a whole new filter, not just another primitive. Remember that in the new UI, the act of selecting the primitive also adds it – there's no confirmatory step required. Compared with the old UI, this makes it impossible to read the info text about a primitive until after you've added it (furthering my confusion between Blend, Merge and Composite). At least there's now a more obvious button to delete it when you realise you've picked the wrong one.

If the new primitive isn't automatically linked to the one above, drag from the triangle on the Offset primitive up to the Gaussian Blur, then release the mouse button to create a visible connection. You can adjust the sliders for the Offset primitive to your taste. Remember that filters are 'live' and you can always re-adjust them later, so don't get hung up on guessing the right values now. On the canvas you should see your blurred, black text move around as you change these values.

The final step with a drop-shadow is to put a copy of the original object back on top. This is most easily done with the Merge primitive, which literally just layers things on top of each other in the order in which they're linked. Again, add it using the effect search bar. If it's not automatically connected, drag from the triangle up to the Offset primitive. A second triangle will be created below the first, which you should drag to the Source Graphic column to the right. Basically we've just told it to merge together two images – the output from the Offset primitive on the bottom, overlaid by the original object on top. Our filter is complete.

In this image I've edited and resized the text, and edited the name of the filter itself, to give the final result – and a picture of what your filter chain should hopefully look like.

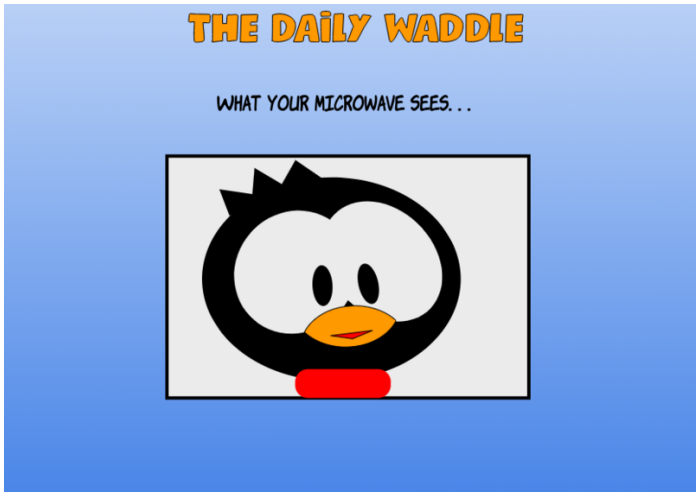






***Mark** uses Inkscape to create comics for the web (http://www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: @PeppertopComics*

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Micro This Micro That – Part None

Written by Greg Walters

Time for a sabbatical

Greetings again fellow Sentient Lifeforms. Things here at landing pad 2997 on Terra are changing in ways that I never thought they would. By the time you read this, I will be on my way to a location in Tau Ceti. The request (read mandate) just came in from the Galactic Council requesting me (read demanding me) to attend a conference to attempt to help broker peace talks between the Gozorn and the Trasforiua. No easy task, that. Unfortunately, due to the distance and time in the talks, my ability to work on my articles will be sorely cut short. Even my Discord help will be cut by a major percentage. (Thankfully, Discord is supported on ansible: *https://en.wikipedia.org/wiki/Ansible*). Wikipedia has it mostly right.

So, for the foreseeable future, I will be pretty much off line. My hope is that I will be able to return to Terra sometime about January 2025.

So, until then, as always; stay safe, healthy, positive and creative!

Crazy Uncle Greggggie

Greg Walters *is a retired programmer living in Central Texas, USA. He has been a programmer since 2002 and in his spare time, he is an author, amateur photographer, luthier, fair musician and a pretty darn good cook. He still is the owner of RainyDaySolutions a consulting company and he spends most of his time writing articles for FCM*

and tutorials. His website is www.thedesignatedgeek.xyz

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UBports Devices: News From The Community



Written by UBports Team

All things FP5 have moved along a lot recently with quite a few things fixed and working. These include the following:

- *fixed vgrid units*
- *adb, mtp and usb*
- *Modem is up*
- *Sound and video decoding works*
- *vibrationaidl added to hfd-service*
- *flashlight*
- *auto brightness*
- *mobile data and calls*
- *GPS*

Many of the parts for voLTE have also not been merged, but have not yet reached our devel update channel yet.

Work is being finished to make the FairPhone 5 available on the installer and, as we know many of you are looking forward to this port, we will let you know as soon as it is available.

We intend to show the FairPhone 5 at the upcoming Ubuntu Summit in the Hague so, if you are there, please come and look us up to find out more.

Special Volla Phone Quintus perks available now

The special offers or perks from our friends at Volla Phone for their Ubuntu Touch version of the new Volla Phone Quintus are up and running.

Order a Volla Phone Quintus with UT pre-installed by using the code Q4UBPORTS on the Volla store for those in Europe.

Outside of Europe you need to chose the "secret" Perk on Indiegogo, revealed only when picking a perk by using this link (*https://ubports.com/r/bEG/m/218025*)



You have until 15th of October to take up these offers so don't hang about and go take a look.

Promoted Devices Webpage

We now have a new webpage for our promoted devices. If you have not found it already, you can find it here. Please go and have a look; we are very pleased with it and there will be plenty more updates to our website to follow over the next few

weeks.

A big thank you to everyone involved in this ongoing project: *http://devices.ubuntu-touch.io/promoted*

[ALPHA] Mimi Browser

A WebKit browser by Alfred E. Neumayer

There has been a lot of chat and discussion across our Forum and TELEport channels about alternatives to our Morph browser over quite a period of time. Well after a few heavy hints at first, and then demonstrations of progress on our Q&As, Alfred Neumayers Mimi browser is available from the OpenStore.

Alfred has stressed, so will we and so does the OpenStore, very clearly, that this is very much an ALPHA release. Many features are still missing and/or not yet working, including:

- *Video playback*
- *Pinch-to-zoom*
- *Copy-paste*
- *Camera support*
- *Incognito mode*
- *Missing settings and customization.*

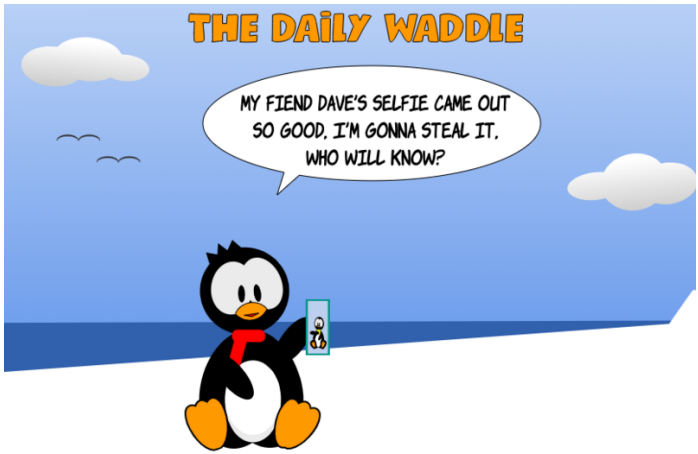


That stated, so far there have been 347 downloads, we have seen comments on web pages opening that would not on Morph, and a general positive response from users across a range of devices. This very positive feedback for the WebKit-based browser points towards a positive future ahead for Mimi.

There is a lot of work and updates to come before Mimi is ready for everyday use, but we think it is well worth you taking the time to give this alpha version a try.

If you would like to support Alfreds work on this app or his many others, or for that matter the work of any of our app developers, keep an eye out for the information on the OpenStore page for a link, or use the popup that appears when you start to download an app. We are sure it will be appreciated.

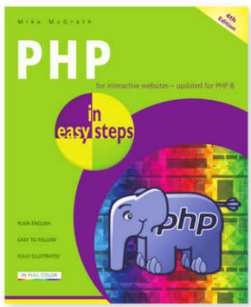
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My Opinion: Linux On Chromebook

Written by Art

I'm not a fan of Chromebooks or ChromeOS, in general, and haven't been since they first came out in 2012. What initially seemed like a good idea was greatly hampered by miserly specs (low RAM count, puny, dim screens, slow processors), goofy peripheral acceptance (fat chance your printer worked), and Google's insistence that nearly everything, including apps, be internet based (cloud first, as some call it).

I figured they'd go the way of netbooks, but I was wrong. Guess there are some users that want a cheap laptop alternative.



Google added Android apps in 2016, but location oriented apps wouldn't work because Chromebooks lacked GPS or other location services.

Not to mention Android apps are made for phone and tablets,

not computer screens, although a resize function was later added to alleviate that issue to some degree.

Late last year, I discovered that Google added Linux apps to ChromeOS as far back as 2019.

Why the delay? Why didn't I know this earlier?

Google is mum on the topic. Go to their website (*https://www.google.com/chromebook/apps/*) and you'll see ads galore for Chromebooks along with the Android app pitch, but not a peep about Linux. Even Microsoft apps are mentioned, but nothing dedicated to Linux – odd given that ChromeOS is basically Linux geared to Google-preferred apps.

If I hadn't been skimming a Linux magazine, I might never have found out.

Looking for a beater Chromebook to test, I came upon a discounted Asus for $120 (original retail, $299). New in box, never opened. Can't buy a used Windows or Mac in decent shape for that price.

Past experiences made me hesitant, but this Chromebook was radically different from earlier models -- 17.3 inch screen, 4GB RAM, 128GB eMMC, and a full size keyboard with numeric keypad. At 5.5 pounds (without the charger), this is no backpack buddy.

Unfortunately, some things never change – screen caps out at 200 nits (my tablet has 500), processor of choice is Celeron, RAM and eMMC are not upgradeable, and ChromeOS is still largely online based.

Before starting my experiment, I had to make sure this behemoth could run ChromeOS let alone anything else.

As I figured, no speed demon awards in the making. Google Workspaces is still a sometimes-it-works, sometimes-it-doesn't mystery, and opening the Gmail app does nothing more than summon a web page.

Give it points for quick boots, though – often less than 10 seconds.

Back to the main topic – is it true that ChromeOS can handle Linux apps?

If the unit was manufactured after 2019, and doesn't fall into the categories of educational or limited corporate models, you should be okay.

Only true way to find out is to fire one up, go to Settings, Advanced, and then Developers. Search for Linux development environment and then check the box.

You'll see a note that the Linux environment is still in beta after 5 years. Really?

If I had to venture a wild guess, I'd say there's no commission in free apps.

At this point, ChromeOS will pick a GB number to sacrifice off the hard drive for this environment. Standard is 10GB for my 128GB drive, models with just 32 or 64GB drives will see that number dip sharply. You can go higher or lower if you choose.

After a couple minutes grinding away, the Linux environment has been created.

Now the fun begins. Do you see a listing of apps? Is there a Linux software store? Does it give you any instructions?

No, nope, sorry.

Instead, you have your choice(s):

1. *Open the terminal and practice your best sudo apt install technique for each app you desire. Curiously, for all the Google security features touted in the Chromebook, it never once asked me for my password when using elevated privileges.*

   I installed Thunderbird, GIMP, LibreOffice, Inkscape,

Firefox, FreeCAD and Dia, plus a boatload of games just for kicks. Quite a bit of keyboarding involved.

2. *Download deb files, and double-click to open and install. Chromebooks can handle deb files now.*

   Used this technique to install the Microsoft Edge browser. Yep, our friends at MS even have a Linux version. I chose this one just to see if Google would play fair and allow me to install it. They did.

3. *Download AppImages, and then right-click the file to allow for execution as an app. Worth noting, you'll have to move these from the download area to files – no desktop icons allowed in ChromeOS.*

   ONLYOFFICE got this treatment. No arguments in allowing it to operate as an executable app.

4. *Several websites I visited even recommended installing Gnome Software Center and/or Flatpak, but those two come with a bit of drama – more on that later.*

Should you forget what apps you installed, ChromeOS creates a new folder labeled Linux with everything conveniently parked there (with the exception of ONLYOFFICE which got its own listing – I would venture a guess and say ChromeOS doesn't see AppImages as Linux).

Now on to the Gnome Software Center and Flatpak fiasco.

Flatpak installed and I was able to access potential apps at flathub.org, but everything I downloaded just disappeared. Somewhere in cyberspace my files are floating around awaiting a new home. Adopt one if you like.

Gnome Software Center was also a mess. Installation went smoothly but ChromeOS safety features keep it from loading in anything less than 50 seconds and once it did, clicking on an app to install created yet another backlog.

Worse yet, even though the software center has an entry for

Flatpak apps, clicking on it resulted in a jam – like traffic going to a Taylor Swift concert.

Research showed these are common problems but there doesn't seem to be an easy workaround. I eventually uninstalled the software center. It was just too slow.

Gave up all hope on Flatpak, too. I must have spent an hour or so adding extra terminal commands in a vain attempt to make it work.

My educated guess would be that ChromeOS saw Flatpak and the Software Center as unwelcome and busy intruders, and did its level best to shut them down.

Why? ChromeOS sandboxes every app so that if something goes awry, the whole system isn't corrupted. While this is a great security feature, it appears preference is given to apps approved by Google. Everything else is suspect.

So, it was terminal apps, deb files or AppImages for me.

Did my successfully installed apps work?

Yes, but never with the operation you might expect from a Linux-only machine.

Less "busy" apps worked just fine. Thunderbird hummed right along, and so did LibreOffice Writer.

However, I made the mistake of attempting to open too many apps at one time.

In one instance, I had GIMP and Thunderbird working, and made the mistake of firing up LibreOffice Impress. Impress just locked up and took the rest with it. Mind you, I hadn't done anything yet, I just had them open.

The poor power button got a workout because that's the only way to do a forced reset here.

And it's plain to see why, if you sit back and look at the system.

A serious lack of RAM, mediocre processor, and a security-conscious OS, conspired to slow down “busy” apps.

And if you want a textbook definition of lethargic, fire up the Edge browser and set the main page to show news, weather, emails, cutesy videos, and whatever else it can dream up. If you haven’t seen this hodgepodge, there must be a couple dozen or more live-action news and video feeds cranking away at the same time.

Power button to the rescue, again.

Just to make sure, I did a RAM check with nothing but the OS active. Half of the 4GB RAM was occupied just keeping the machine running and, for unknown reasons, available RAM would dip down to around 1GB.

In short, you should have at least 8GB RAM to effectively run a Chromebook with Linux apps. Unfortunately, RAM is soldered on many Chromebooks, so you’re left with what you get.

Sensing I may have overplayed my hand, I did a powerwash (Google’s term for “factory reset”), and opted to eschew the known troublemakers. Ignoring the Gnome Software Center, Flatpak and Edge browser showed slightly better results but nothing to cheer about.

Would I recommend one of these cheap Chromebooks as a Linux box replacement?

Only if you can get one at a serious discount, and can live with the potential frustrations. Many are being deeply discounted to make way for the new Chromebook Plus series.

And just what is a Chromebook Plus, you ask? These models sport better Intel (i3 at the least) or AMD (Ryzen 3 or above) processors, 8GB RAM minimum, full HD graphics (1080p), and a 1080p webcam (double the previous rating). Drive capacities also increase to a minimum of 128GB, but I have yet to see one that goes above that.

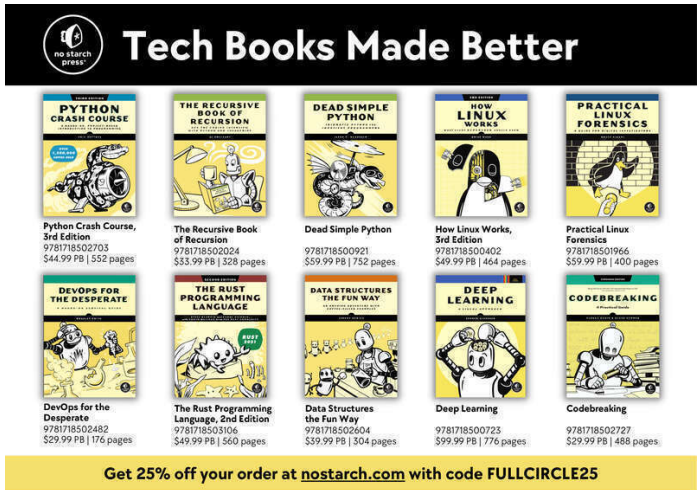
Same old dim screens though, often capping out below 300 nits.

Along with the increased power under the hood, pricing also goes up to a starting price around $400 and peaking somewhere around $750.

Ouch, that's baseline Windows laptop turf.

Even more bizarre are the various entries online that recommend ChromeOS wannabes invest in a used Windows laptop and install ChromeOS Flex, a version for computers not manufactured as Chromebooks (but you lose the Android or Linux capabilities).

As for me, I now have a digital sticky-note on my Linux laptop that states, "No More Chromebooks!", and my $120 special has found a new home with a retiree who checks emails and watches cat videos, but nothing much else.



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HowTo: Write For Full Circle Magazine

Written by Ronnie Tucker

Guidelines

The single rule for an article is that it must somehow be linked to Ubuntu or one of its many derivatives—Kubuntu, Xubuntu, Lubuntu, etc.

The Official Full Circle Style Guide can be read at: *http://bit.ly/fcmwriting*

Please read this document before submitting an article. Follow the guidelines and you will have a much better chance of seeing your article in Full Circle.

Writing

There is no word limit for articles, but be advised that long articles may be split across several issues. In your article, please indicate where you would like a particular image to be. Please do not use any formatting in your document.

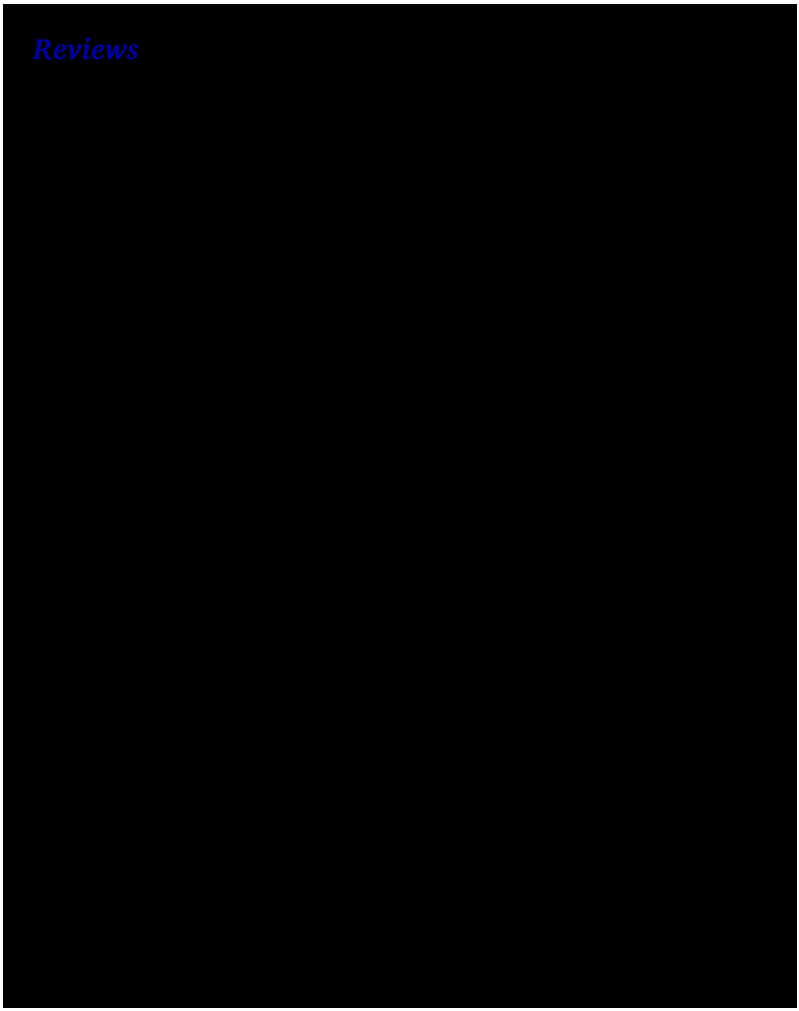
Images

Images should be no wider than 800 pixels, in JPG format, and use low compression. When you are ready to submit your article, please email it to: *articles@fullcirclemagazine.org*

Non-English Writers

If your native language is not English, don't worry. Write your article, and one of the proofreaders will read it for you and correct any grammatical or spelling errors. Not only are you helping the magazine and the community, but we'll help you

with your English!



You don't need to be an expert to write an article – write about the games, applications and hardware that you use every day.

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Review: Ubuntu 24.10

Written by Adam Hunt

Out on 10 October, 2024, Ubuntu 24.10 is notable for a number of reasons.

First, of course, this marks the beginning of a new Ubuntu development cycle. Following April's long term support (LTS) version, Ubuntu 24.04 LTS, this new edition is the first of three interim releases that will be testbeds for the innovations and changes that will eventually land in the next LTS, Ubuntu 26.04 LTS, expected in April, 2026. So, we will keep tabs on what is new along the way to that next LTS.



Ubuntu 24.10 default desktop

Second, Ubuntu 24.10 denotes twenty years of Ubuntu! The first Ubuntu version was 4.10 "Warty Warthog", so named by Mark Shuttleworth because of its rough state when released on 20 October, 2004. With its twice-yearly release schedule, it improved quickly and now, here we are celebrating twenty years of Ubuntu with release 24.10.

Third, this release, "Oracular Oriole" may be the hardest tongue twister of a code name yet used in the Ubuntu world. I challenge anyone to say "Oracular Oriole" fast three times!

Fourth, this is the second Ubuntu release that has had an “O” code name. The previous one, “Oneiric Ocelot”, was used for Ubuntu 11.10, out on 13 October, 2011. Since the English alphabet has 26 letters and Ubuntu releases are made every six months, the code name letters repeat every 13 years.

And fifth, with Ubuntu 24.10, it has now been using systemd as its initialization system for twenty releases, since Ubuntu 15.04, with no notable issues.



Ubuntu 24.10 default dark wallpaper

Installation

I downloaded the ISO file from the official Ubuntu website using BitTorrent. This download was 5.7 GB which is actually 7% smaller than the last release.

As usual, I carried out an SHA256 sum check on the ISO file from the command line to ensure that the download was good and it passed.

I did my testing from a USB stick equipped with Ventoy 1.0.99. Ubuntu is listed as officially supported and it booted up fine, at least on modern hardware.



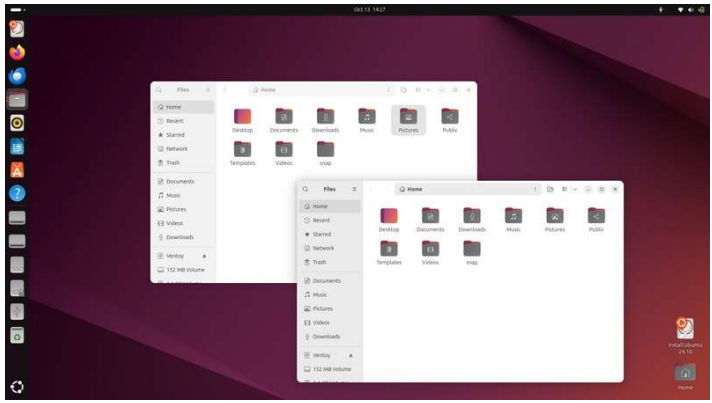
Ubuntu 24.10 alternate oriole wallpaper

System requirements

The recommended minimum system requirements for Ubuntu 24.10 have not substantially changed since 20.04 LTS, although the wording has been updated a bit and is now given as:

- *2 GHz dual-core processor*
- *4096 MiB RAM (system memory) for physical installs*
- *2048 MiB RAM for virtualised installs*
- *25 GB (8.6 GB for minimal) of hard-drive space (or USB stick, memory card or external drive but see LiveCD for an alternative approach)*
- *3D acceleration-capable GPU with at least 256 MB of VRAM*
- *1024 x 768 or higher resolution display*
- *USB flash drive or DVD drive or for the installer media*
- *Internet access is helpful*

Overall, this means that Ubuntu 24.10 should run okay on hardware that was designed for Windows 7 or later, although I would suggest at least 8 GB of RAM as a working minimum.



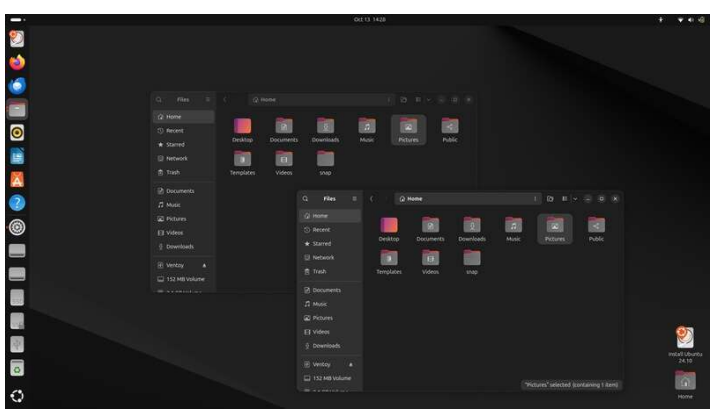
Ubuntu 24.10 GNOME Files 47.0 default theme

New

Despite all the hype in the official announcements, this release does not have a lot new for desktop users and most of the changes that are incorporated are small.

The Power Profiles Manager now supports multiple optimization drivers and has battery awareness to automatically increase the optimization levels when your computer is running on battery.

The App Center has been updated and now shows installation progress. It also now has support for installing third party .deb files, something that a number of reviewers had asked for. I guess they didn't like just using GDebi instead.



Ubuntu 24.10 GNOME Files 47.0 dark theme

New this time around is the Security Center (file name: desktop-security-center) which has "permissions prompting" for home directory permissions. The interface is marked "experimental" and it is definitely a work in progress with more features intended to be added over time. It is provided as a Snap file and is free software under the GNU Affero General Public License 3.0.

The Ubuntu 24.10 desktop is now based on GNOME 47 and includes some of the applications from that set. GNOME 47 also brings new floating dialogue buttons, an improved interface on low-resolution displays, hardware encoded screen recording, better GTK rendering when using older hardware, and persistent remote logins among other minor changes.

The Ubuntu launcher also now shows the progress on Snap files which are being updated in the background in place of the dock icon just disappearing. It also has a redesigned icon right-click menu that includes an "app details" option which opens up the Ubuntu App Center to present those promised details. I am not sure how useful this feature really is, since if the application is on the launcher, you already have it installed.

Support for fingerprint enabled devices has also been improved.

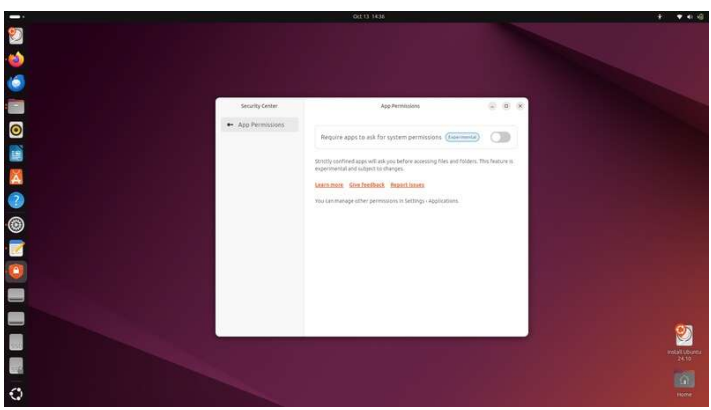


Ubuntu 24.10 Firefox 131.0.2 Full Circle

Ubuntu 24.10 now uses a Wayland protocol display server by default instead of X.org, including for computers with Nvidia graphics, although X.org is still available on boot-up if you prefer.

There are many behind-the-scenes changes in this release that most desktop users will probably not notice. These include: binutils 2.43.1; BlueZ 5.77 Bluetooth; Cairo 1.18.2; GCC 14.2; glibc 2.40; LLVM 19; .NET 9 available, with .NET 8 support extended to IBM Power; Netplan v1.1; NetworkManager 1.48; Noto Color Emoji Font 2.047 with Unicode 16 support; OpenJDK 21, with versions 23 and 24 available; OpenSSL 3.3; Poppler 24.08 PDF rendering; Python 3.12.7; Rust 1.80 and xdg-desktop-portal 1.18; among the other hidden items.

This release uses Linux kernel 6.11 which has some new features, including default crash dumps, as well as the usual array of updated hardware support. The initialization system is systemd v256.5.


Security Center
App Permissions
App Permissions
Require apps to ask for system permissions
Experimental
Strictly confined apps will ask you before accessing files and folders. This feature is experimental and subject to changes.
Learn more
Give Feedback
Report Issues
You can manage other permissions in Settings › Applications.
Install Ubuntu 24.10
Home

Ubuntu 24.10 Security Center on desktop

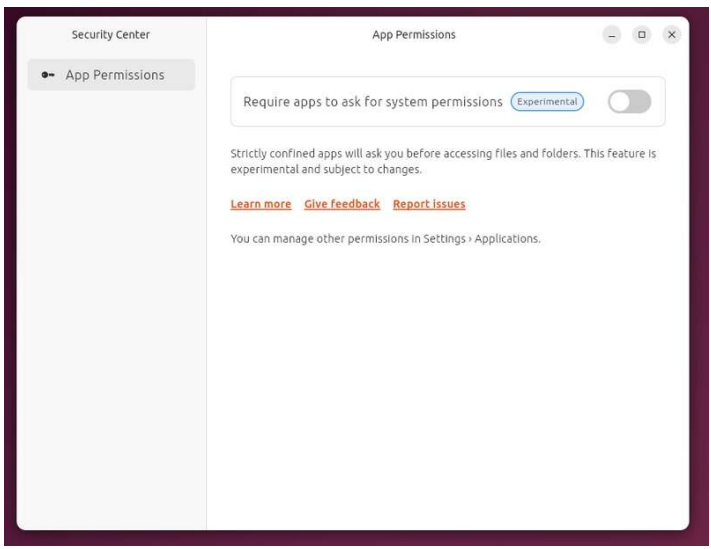
Settings

Ubuntu 24.10 brings some changes to settings. GNOME 47 now has ten user-selectable accent colors, a feature which Ubuntu has had since Ubuntu 22.04 LTS and which the GNOME desktop adopted. Ubuntu 24.10 moves to using those upstream GNOME accents instead of its own but the results are the same.

Like recent Ubuntu versions, 24.10 offers just two window color themes, “default” (ie light) and dark.

Like all new versions of Ubuntu, this release comes with a new wallpaper. This one is oriole-themed, of course, and changes to a dark wallpaper when the window color theme is switched to dark. There are 13 wallpapers provided, including eight oriole-themed ones.

The 20th anniversary celebration includes a Warty Warthog nostalgia wallpaper with the anniversary logo, all in brown. Other anniversary items are a special accent color called “warty brown” and the original Ubuntu 4.10 start-up sound on boot which can be turned off if you prefer.


Security Center
App Permissions
App Permissions
Require apps to ask for system permissions
Experimental
Strictly confined apps will ask you before accessing files and folders. This feature is experimental and subject to changes.
Learn more
Give feedback
Report issues
You can manage other permissions in Settings › Applications.

Ubuntu 24.10 Security Center

Applications

As in recent Ubuntu releases, if you install the default minimal installation you will get only Firefox, Nautilus, GNOME Text Editor and not much more, although any needed applications can easily be added from the repositories. The supplied ISO file does actually include the “extended selection” of applications, though, in case you would rather have the full collection. The

live session of Ubuntu boots up to the extended selection.

Some of the applications included with the full 24.10 LTS extended selection are:

- *Archive Manager (file-roller) 44.3 file archiver*
- *Deja Dup 45.2 file back-ups**
- *Firefox 131.0.2 web browser***
- *GNOME Calendar 47.0 desktop calendar*
- *GNOME Clocks 47.0 clocks*
- *GNOME Disks 46.1 disk manager*
- *GNOME Disk Usage Analyzer (baobab) 47.0 graphical disk display*
- *GNOME Document Scanner (simple-scan) 46.0 optical scanner**
- *GNOME Document Viewer (evince) 46.3.1 PDF viewer*
- *GNOME Files (nautilus) 47.0 file manager*
- *GNOME Image Viewer (Eye of Gnome) 47.0 image viewer*
- *GNOME Snapshot 47 beta webcam application*
- *GNOME Terminal 3.54.0 terminal emulator*
- *GNOME Text Editor 47.0 text editor*
- *GNOME Videos (totem) 43.0 movie player**
- *Gparted 1.5.0 partition editor****
- *LibreOffice 24.8.2.1 office suite, less LibreOffice Base*
- *PipeWire 1.2.4 audio controller*
- *Remmina 1.4.35 remote desktop client**
- *Rhythmbox 3.4.7 music player**
- *Security Center (desktop-security-center) 0+git.84f197a security controller***
- *Shotwell 0.32.7 photo manager*
- *Startup Disk Creator (usb-creator-gtk) 0.3.17 USB ISO writer**
- *Thunderbird 128.3.0 ESR email client***
- *Transmission 4.0.6 bit torrent client*
- *Ubuntu App Center 1.0.0 package management system***
- *Wget 1.21.5 command line webpage downloader*

* indicates same application version as used in Ubuntu 24.04

LTS

** supplied as a Snap, so the version depends on the upstream package manager

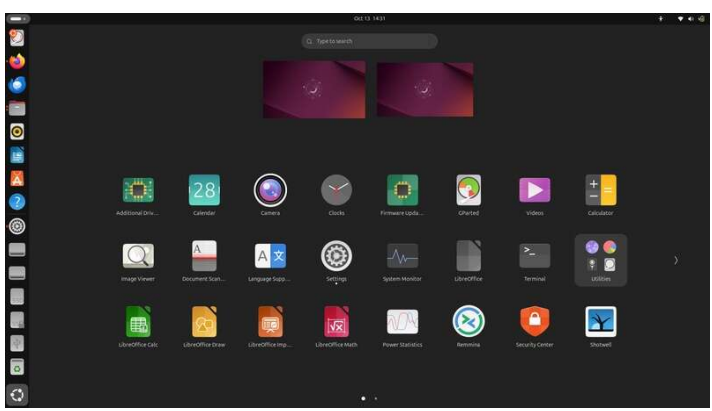
*** indicates included on the ISO for boot-up but not included in a full installation

The application collection is a mix of GNOME versions, this time mostly from GNOME 47, with a few GNOME 44, 45 and 46 leftovers.

The APT 3.0 package manager, which runs in GNOME Terminal, has a friendlier user interface, spacing the lines and items out for better clarity, at least for users who do their package management from the command line.

The GNOME Files 47.0 (Nautilus) file manager has had some upgrades, including a sidebar redesign with the bookmarks for local folders further down and "trash" moved up, similar to Nemo. Bookmarks can now be removed with a right click, plus added and reordered using drag and drop. Internal drives are now displayed directly, instead of being under "other locations", which is convenient. File searches have also been redesigned, including a new info button.

The GNOME Disk Usage Analyzer has had a redesign to make it look more up-to-date.

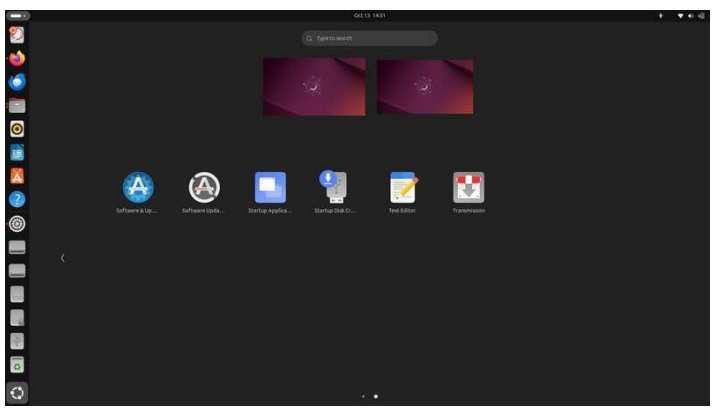


Ubuntu 24.10 menu 1

Conclusions

Ubuntu has come a long way since that first somewhat “warty” release twenty years ago. Today it is not only widely-used, but highly influential as well, spawning many official flavors and other derivative Linux distributions.

Ubuntu 24.10 not only marks the twenty year Ubuntu anniversary, but also kicks off a new developmental cycle with some incremental changes. It will be interesting to see what the next interim release, Ubuntu 25.04, brings when it arrives in April, 2025.



Caption

External links

Official website: *https://ubuntu.com/*

***Adam Hunt** started using Ubuntu in 2007. He lives in Ottawa, Ontario, Canada, in a house with no Windows.*

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Book Review: The Self-Taught Cloud Computing Engineer

Written by Erik


packt
1ST EDITION
The Self-Taught Cloud Computing Engineer
A comprehensive professional study guide to AWS, Azure, and GCP
DR. LOGAN SONG
Foreword by Yu Meng, Ph.D, IEEE Senior Member, MIT App Inventor Certified Expert Trainer, ISEF Grand Prize Judge

Website: *https://www.packtpub.com/product/the-self-taught-cloud-computing-engineer/9781805123705*

Price: $50

Blurb: *"The Self-Taught Cloud Computing Engineer is a comprehensive guide to mastering cloud computing concepts by building a broad and deep cloud knowledge base, developing hands-on cloud skills, and achieving professional cloud certifications. Even if you're a beginner with a basic understanding of computer hardware and software, this book serves as the means to transition into a cloud computing career. Starting with the Amazon cloud, you'll explore the fundamental AWS cloud services, then progress to advanced AWS cloud services in the domains of data, machine*

learning, and security. Next, you'll build proficiency in Microsoft Azure Cloud and Google Cloud Platform (GCP) by examining the common attributes of the three clouds while distinguishing their unique features. You'll further enhance your skills through practical experience on these platforms with real-life cloud project implementations. Finally, you'll find expert guidance on cloud certifications and career development. By the end of this cloud computing book, you'll have become a cloud-savvy professional well-versed in AWS, Azure, and GCP, ready to pursue cloud certifications to validate your skills."

There is something I need to get out of the way first, though I have read part one of the book, I can't really comment too in depth as I know next to nothing about Amazon cloud services, as there is NO WAY IN HELL I'll give them my debit card details to have a spin and learn on their platform. They need to provide a learning platform if they want people to learn.

The TL;DR version: the book does teach you a fair bit, however it feels AI generated in some parts and you really need to pay attention to acronyms. The whole thing is a bit of a mish-mash; if you have never seen the "cloud" interfaces before, you may struggle. If you are triggered by AI generated writing (not the facts part), I suggest you don't read this book.

I had very low expectations when the book opened with "History of Computing", however, it spanned pages four and five and it was done. When I say I know next to nothing about Amazon web services, it does not mean I have not used it before; I have done a few roll-outs on it, and it was slower than turtles stampeding through peanut butter (circa 2021/2022). This book claims to be "self-taught", so I was expecting a lot of explanations to start; however, it fell into the house, door and all.

2. **Select the hardware configuration of the EC2 instance**: This is just like selecting hardware—the number of CPUs, RAM, and HD sizes when purchasing a physical desktop or laptop PC. In AWS, the hardware selection is to choose the right EC2 instance type—Amazon has categorized the EC2 hardware configurations into various instance types, such as **General Purpose**, **Compute Optimized**, **Memory Optimized**, and so on, based on business use cases. Some AWS EC2 instance types are shown in *Figure 1.4*:

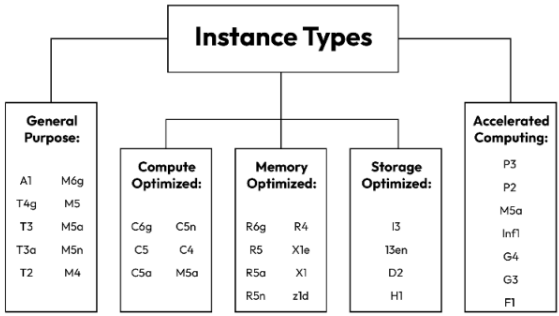


Figure 1.4 – EC2 instance types

Each instance type is specified by a category, family series, generation number, and configuration size. For example, the `p2.8xlarge` instance type can be used for an Accelerated Computing use case, where `p` is the instance family series, `2` is the instance generation, and `8xlarge` indicates its size is 8 times the `p2.large` instance type.

We will choose `t2.micro`, which is inexpensive and free-tier eligible, for our EC2 instances.

I liked that the information I got was things that I did not know, and it broadened my understanding of the platform. Though I would have liked to follow along, I'd rather spend my time learning with a provider that does not want my credit-card details. The explanations were clear enough that I could answer all the questions at the end of chapter one, without practical.

Chapter two was cloud storage services, and covered things I had not heard of before, which was really neat. Snowball, snowcone and snowmobile, weird names to be sure, but here some of the reading felt like marketing bs instead of teaching, but, to be fair, it was really minimal. I fell over some questions at the end, but that had more to do with English not being my first language than bad explanations in the chapter. The screen shots presented were up-to-date, even considering that Amazon likes changing the layouts.

Chapter three took me into the networking side of AWS, with things like VPC & CDN. Initially it felt like a sponsored segment more than a practical book with sentences like: *"Time and cost effectiveness: Amazon VPCs are created at no cost. Since they are*

virtual, you can provision VPCs and subnets on the fly, and reduce the cost of your network infrastructure." Like it was copied from the website, *"Time"* is in the preamble, but mentioned nowhere, and if it said *"cost effectiveness"*, why did they feel the need to add "and reduce the cost of your network infrastructure" at the end? Though the images showed what looked to be real-world examples, I started suspecting AI generated nonsense. I looked up the author and he is real, (*https://www.youtube.com/watch?v=m63uejwbb4w*), but he is also a machine-learning pundit.

Chapter four took me into relational databases offering of Amazon. Again I appreciated the minimal like two-page overview of databases, that is not padding, before he jumps into it. Here again, things like data warehouses were explained nicely. The next part also reads very informative, covering Amazon RDS and No SQL, etc. Then when I hit "Elasticache" (basically Redis), I found that strange marking language writing again, making my AI senses tingle. Also here the images have different resolution in one field to the next, as well as differing fonts, that scream AI. Just by-the-way, this book covers the view from only a Windows user's perspective. I think the "looking for signs of AI" got the better of my focus, because I looked at the the end of chapter questions in the wrong way.

1. RDS1 is created in VPC1. How would you configure it to be accessible from your home laptop?

   A. Configure SG for RDS1 and NACL for subnet1/subnet2.

   B. Configure SG for RDS1.

Configure Stargate or Relational Database service 1 and salt for subnet1... XD

Chapter five moved into Amazon data analytics services, something else I was not familiar with, so I was looking forward to it. Yep big data is where they usually make back their money tenfold, once they have all your data and host it cheaply to attract your business. Here is where the cow part of 'cash cow' comes in, where you are milked. Again I was hit with marketing bs instead of teaching, trying to play off how "cost effective" it is, when in reality, it is everything but. Then, in the security line, we are given compliance, as a reason or feature? As I said before, this book makes my AI senses tingle

like few others. Thereafter, everything is laid out in a very readable and understandable way with some images thrown in that make you go oh... A proper meat-and-potatoes section, that is nice and dense, and you may need to read a paragraph more than once.

Chapter six is machine-learning; here the accent of the book changes and you can see this is where the author's interest lies. It is literally like two people wrote this book. Though there still is that way of writing that breaks your stride, sprinkled in like chocolate chips. *"Real-time translation: Translate can translate text in real time"* – I mean, what the actual ****??? Good grief! I am six chapters deep and already I need to take breaks from the book, not good.

So here I am continuing the book on a Saturday, as I could not even... :). I want to read part two of the book, but my FOMO will not allow me to skip part one. Chapter seven is Amazon Cloud security services, and honestly, it does not differ from other providers as far as I can tell. What I liked about this section, is that there were sections where you made mistakes and fixed those mistakes, like you would in the real world. The explanations are clear, but I would have liked maybe a few red rectangles to understand where the author is talking about, like: "Next Amazon S3 noticed that the requested object was encrypted." <- like how do you, and more importantly me, know that? (Yes I know most stuff is encrypted by default). There were also a few times I went 'huh' again, when you get jumped with: "the third A in amazon AAA" and I'm like everything in Amazon starts with bloody 'A', so I look back a few paragraphs and I do not see this supposed 'AAA'. I go back to the beginning of the chapter, looking for 'AAA' and not finding it. This was my other peeve with this book. It is supposedly for "self-teaching", but does not drive things home. The so-called case study section again reads like the marketing section of a website instead of a real case study. I gave up and moved to part two, where I wanted to be.

Part two, GCP.

The author immediately lets you know that he will be comparing GCP to AWS. This is great if you know one and not the other. Off the bat, I would have liked it if he used the GCP interface and linked what he was showing to where it is. While the chapter does its best to mirror the AWS side of things, some things are mentioned once, but never dived into. This would have been a great segue into gsutil, something I really need to allocate time to.

Just like that, we are into chapter nine, cloud databases and big data services. (Not storage services, to mirror part one.) Immediately we hit cloudSQL, and we are shown how to create a MySQL db via the Google cloud console. However, here you are not shown where it hides, like the author did for AWS. (I look out for it as it is something I remember when I was totally green, where is the cloud console?) We are then introduced to cloud spanner and cloud firestone. (Which I have never used, so I was all ears ... or make that eyes.) Using cloud run, we get to implement something. Awesome! You get to use the bucket you created earlier, making the learning feel engaging. Yip, my hot chocolate started getting cold by the time I was reading this. We move into Google's moneymaker Bigtable for an overview. Here the crappy marketing writing is absent, not telling you how much money you save. The author covers each subdomain with its own overview so you can get to grips with the terms.

We then get to implement our own pipeline. Exciting stuff! A whole lab on just what I wanted. Before the end-of-the-chapter questions, we get a few lines on BI (Looker) and are told to go read up on it online. Again you can answer "A" to all questions and pass the test, just like in part one.

Chapter ten has us looking at AI services. Google has the Vertex AI suite, something else I have not looked into before. Here the author does what he did in the previous chapter and gives an overview and breaks it down into manageable chunks. As I am not familiar with it, I can only compare it to previous chapters, and again it feels like the author's passion is here. It feels better explained than any of the previous chapters.

Chapter eleven, cloud security services, is where I leave you, as I have oveshot my space in the magazine again. Here I would have liked to see navigation, as this trips up many newbies, including me when I was green (yes, I know about the direct search. Maybe a few more screenshots with arrows or blocks, as I feel this is an important section for any cloud engineer. (You spend a lot of time here and it felt a bit light.)

I hope I have given you an idea of what the book is like. If you would like to give it a skip or pick it up, the link is in the article. Honestly, I don't think it is worth the asking price of $50 (almost $1200 here, I can get four other books on the topic for that price.)

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Letters

Compiled by Ronnie Tucker

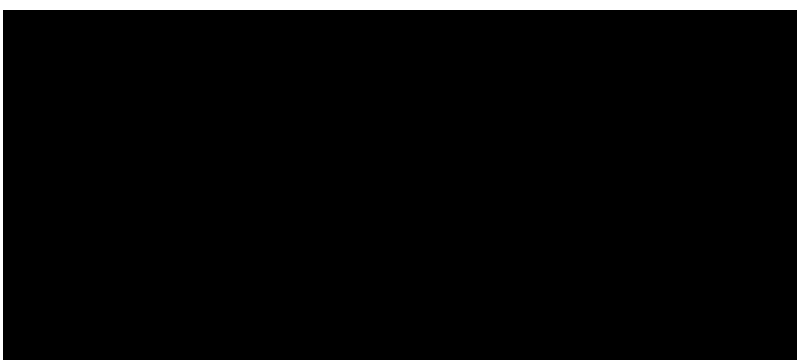
letters@fullcirclemagazine.org

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Q&A

Compiled by Erik The Unready

If you have a Linux question, email it to: misc@fullcirclemagazine.org, and Erik will answer them in a future issue. Please include as much information as you can about your query.



I worked for a small IT company once and we sold the whole shebang to a user, from power cord to printer, and every peripheral in-between. The user wanted a laptop, with all the conveniences of a desktop. This meant extra PSU, so one could sit on the desk at all times, wireless keyboard and mouse, and an extra screen, etc. etc. I had to mount the router under the desk and square away all the cables. However, the user would complain about Microsoft Word “going crazy”. We had the laptop in and all the techs played with it, but found no faults. Obviously we installed the office package again and sent it on its merry way. Two weeks later, the user was there again, same issue. This continued three or four times, before the user started getting pissy with my boss. The last time she ripped out everything, cables and all, and dumped it on the workbench.

We had a great time with the laptop, it was a rather fancy one – playing games, etc. Not one issue could be identified, so we reloaded the laptop, and after the user had tested it at the office until she was satisfied, I installed it all back at her home. A few days later we got the call. My boss sent me to her house, as I was the senior technician, and while I was there, the machine behaved. I just arrived back at the office when she called to say it is faulty again. I went back and... Nothing. I was not until the next time one of the juniors went, the issue got sorted. He took the approach of having several cups of coffee and rusks there, while he watched her work. (I suppose skirting work is not always bad). He was on site for two and a half hours, before the problem re-emerged. He noticed she had a cat (which was not around when I was there), and the said feline would pop its butt on the wireless keyboard. After all the verbal abuse we were put through, not the client, nor the boss said anything. Sometimes you just have to admit that you were wrong or say sorry. So here is a bottom-of-my-heart apology, if I ever steered any of you wrong.

Q: I took the plunge and upgraded to 2024. Unlike windows, things seem faster! I have one issue though, with my gnome extensions – It installs fine, but doesn't seem to appear in GNOME Tweaks on Ubuntu?

A: Versions, friend, versions. The versions of your extensions may need to update or only work on earlier versions of Gnome. However, the question would be better directed at the author of the extension.

Q: Hey. I have created an Ubuntu 22.04 and an Ubuntu 24.04 vm in Virtualbox. There is a catch, they both have the same IP, but my network is set to DHCP. Is this like a default in Ubuntu? Is that not a security risk?

A: DHCP works like this, it gives an IP to a MAC address. As both your network cards are the default virtual network card, they will both have the same IP address as the MAC address is the same. (Remember the goal of Virtual Machines was to have everything the same, so it would work the same, everywhere).

Virtualbox has an option to change the MAC address for you, or you can do it if you like, just remember to do it while it is shut down (the short version).

Q: I have a black box i5 with 16GB RAM and Nvidia GT730 on Ubuntu 18.04. I want to upgrade to 24.04, but I have read the support for older cards is crap. It is not even that good on 18.04, as a lot of my games lag. Should I stick to older proprietary drivers or newer nouveau drivers? I try to read up on this but I'm not technical. I'm not too well off, so I can't buy a specialist Ubuntu Computer.

A: What I like to tell people is that you need to think of Nvidia's cards like a volume knob. The 20 being louder than 10 and 30 being louder than 20. However, anything below 50 is made to game on low-to-medium. It is not your diver or Ubuntu's fault that the games lag. My suggestion is to save up and get a card that is above 50. That said, the generation also matters, we went from 7-series to 8, to 9, to 10, before jumping to 20, 30 and 40. Save up a bit and aim for as high a generation that you can afford.

Q: Hi! I have a Dell OptiPlex 5060, 8th Gen i5, 8GB, 256GB, W10P, SFF, running Ubuntu 22.04, linked with a CAT6 cable to my Huawei LTE 300Mb/s router. My connection is always 100. How come?



A: Hi, first question 100 what? **Edit - So your machine has a 1 gigabit port (1000Mb), I looked it up, but it looks like your router only has 100Mb ports from what I understand. The 300Mb/s is for the wireless. It does not matter if you use CAT5 or CAT6 cabling here. What matters is that both ends are the same, you cannot speed up your Honda 50cc delivery bike to race a Yamaha R1, (without major changes), but the R1 can slow down to match the 50cc's top speed. Hope that makes sense.

Q: Man, help me. I have Ubuntu 24.04 on my Lenovo mini, and Baseus USB-C hub. I'm trying to run 2x Asus 24-inch screens on

it, but Ubuntu only sees one. How can I fix this?

A: That is very little information, but I'll tell you what I know. Screens do not daisy-chain on USB-C, (you would need thunderbolt), so if you are adding both to the hub, you will see only one display. I suggest getting a USB-C to HDMI cable, and plug it directly into the laptop, and you can then plug your other screen into the USB-C hub via HDMI cable. This configuration should work. If you want more, you need to tell me more.

Q: I have a problem dua- booting with Windows 11 and Ubuntu. I installed Windows first, then Ubuntu, like you are supposed to. I go out of Ubuntu, into Windows 11, and when I go back to Ubuntu, I get the "Try or install Ubuntu", but I installed it. So is everything gone now?

A: OK, the short version is your BIOS/UEFI is pointing to the wrong boot device for Ubuntu; make sure you have removed your SD/USB drive that you installed from. Secondly, some BIOS/UEFI cache the last boot location. If so, you would need to select a different boot and try to boot there, then set it back to the way it was and it should now cache the correct one.

Q: I have bought a new SSD for my ageing laptop. I cloned my drive and popped it in. It booted perfectly. One snag though, I can't get my dual-boot Windows 10 to boot. I have repeated the process carefully 4x now, and I get the same result.

A: I'd say that means the problem is Windows? So why are we talking about it on an Ubuntu channel? Remember, Windows uses hardware UUIDs to prevent piracy, etc.

Q: My laptop is rather low spec, and I use it only to watch videos on long trips lately. NGL with 24.04, I get lots of mini-freezes. Is there a way to make the playback smoother, like it was before?

A: You did not tell me what player you were using. Straight up Mplayer is probably the lightest, then maybe SMPlayer (usability skin for Mplayer). If you are using something

heavier, look at the amount of passes you are making in post-processing quality. This usually chokes with integrated graphics.

Q: I am running Virtualbox with Ubuntu inside of Ubuntu. Though I don't use it, I get an error on the right saying: Can't enumerate USB devices Why not?

A: Literally click on that and it will expand and tell you that you need to add the vboxusers group to your account. See: *https://ubuntuforums.org/showthread.php?t=2480323*

Q: I managed to get a display model HP with an Nvidia 1650 display card with Windows 10 for cheap. I immediately deleted Windows and installed Ubuntu. The problem is, when I go to drivers, it is empty. I'd like to play some games, if possible. If I check, it is using the igp display. It is like the Nvidia card does not exist.

A: Did the dealer not give you the incorrect model? With laptops, there is always one that has the same name and looks, but minus the dedicated card. Install inxi and run: inxi -b If it is there, you can try installing: sudo apt install nvidia-common - and then reboot and try the drive application again.

Q: Is there a notepad++ I can use on Ubuntu? I'm learning programming and I would like to stick to what they are showing us.

A: I swear we have had this question before, but you can use notepadQQ or Notepad Next. I even think notepad++ now works on Ubuntu, thanks to Snaps.

Q: How can I get more terminal themes, the ones that come with Ubuntu are few and ugly.

A: Here you go, my good man! *https://gogh-co.github.io/Gogh/* You do know you can make your own, right?



***Erik** has been in IT for 30+ years. He has seen technology come and go. From repairing washing machine sized hard drives with multimeters and oscilloscopes, laying cable, to scaling 3G towers, he's done it.*

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Ubuntu Games: Archrebel tactics

Written by Erik

Website: *https://ularis-badler.itch.io/archrebel*

Price: Suggested $2

Blurb: *“Archrebel is a sci-fi turn-based strategy war game, strongly inspired by the classic Rebelstar released in 1986. In Archrebel, players control a few dozen units on a grid-based map, performing actions limited by a classic action-point system similar to the one found in UFO: Enemy Unknown.“*

If you do social media (I don’t, but a lot of you do), this is the link: *https://x.com/UBadler*

Paging through pages and pages of lesbian/furry visual novels on itch.io in the “Linux” games section – because that is apparently all that qualifies as Linux gaming – I finally found something I am excited about. I went panning for gold and finally struck out. Based on Rebelstar, a game I could not figure out because I thought it was rock guitarists...



To my mind as a kid, it looked like a guitarist and a drummer and a stage. I tried to get the drummer to be the drums man. The other gun looks even more like a guitar!

Moving right along... (*https://zxart.ee/eng/software/game/tactical-combat/rebelstar*)

So it was only when Rebelstar II and Laser squad released a few years later that the penny dropped. It bit me like gambling addiction; if I had more TV time, I'd probably have played it more. Alas, the ZX Spectrum connected to the family TV and you would have to compete with said family for time. That the game was genre defining is not even up for debate, and it played in glorious 48K of memory. I bought the UFO games twice, once on stiffy disk and once on Steam... So it was a no-brainer for me to pick up this demo. I also expected it to be tiny, but more on that later.

Now obviously, the game does not look like the picture above in all eight of the Speccy colors, but there was an attempt made to keep the feel of the original. I have heard people say it is in the vain of the commodore 64; NO it is not, the commodore 64 had fat chunky blocky graphics to start, and it also never got the game: *https://www.gamesthatwerent.com/gtw64/rebel-star/*

Installation:

I downloaded the huge demo, because of Unity, and unzipped the file. I set the execution bit on the only executable file, and launched the game from my terminal. Bad idea. I knew it was going to lag, Unity player and all, but it took ages to run. However, running the file via the file manager, it was twice as fast. Lesson learnt, so you don't have to. I still feel like the game used the on-chip graphics instead of my dedicated Nvidia graphics, but I'm sure that will come.



Gameplay:

The game was happy with 1920x1080, but not so happy with 4K. Some people may be upset about the graphics; to them I say, just hold on, the game is only in v0.13!! (Yes it is this polished at 0.13.) However, I do not mind at all. This game is supposed to be played in your mind, like reading a book. (If you ever played caves of Qud, you would understand). That is also not the only thing they (CoQ and this one) have in common, the demo is huge; from what I can tell there's a few hours worth to be played! I am ten minutes in (OK maybe more) and already I am willing to give it the thumbs up.


TRAVEL MODE
> PLANNED FEATURES
THIS IS THE LIST OF PLANNED FEATURES. IT IS POSSIBLE THAT SOME OF THEM MAY END UP BEING DISCARDED.
MECHANICS:
+ CAMPAIGN WITH 3 JOINABLE FACTIONS
+ CR BETWEEN MISSIONS UNIT MANAGEMENT.
+ LEVEL UP & UNIT CLASS SYSTEM.
+ HERITAGE SYSTEM & IMPROVED PANIC MECHANICS.
+ FEMALE UNITS & MORE UNIT REACTIONS DIALOGS.
+ CO-OP AND PVP.
CAMPAIGN/CONTENT:
+ SINGLE & CO-OP CAMPAIGN.
+ PROC-GEN MISSION CREATOR.
TALL GRASS
PRIMARY OBJECTIVES:
LOCATE, RESCUE, AND REUNITE WITH BRAVO TEAM TO RECOVER THE ESSENTIAL SUPPLIES USING THE MINING DROID. SIGNAL YOUR RETREAT WITH A FLARE AFTER DISABLING THE ENEMY AIR DEFENSE SYSTEM AND PREPARE FOR EVACUATION.
OPTIONAL OBJECTIVES:
INFILTRATE AND PLUNDER THE ENEMY'S COMPOUND. KEEP IN MIND THAT THERE'S NO GUARANTEE REGARDING THE POTENTIAL DANGERS AND REWARDS THAT MAY BE FOUND INSIDE.

The only issue I have with these types of games is the font. Dammit Jim, we are in 2024 not 1948. The Speccy had something like 192x192 resolution, we have ten times that and more!!! Why does the font need to sucketh this much?

As you can see from my screenshot, everything has a health bar, even the grass and trees and rocks, so it makes me think destructible terrain is in the works, that would be really awesome! For now, we have pretty much Rebelstar, with updated graphics and sound and missions. As this game is not done, I will not discuss the graphics and sound in their own section. From what I have heard so far, I can gladly say the sound is top notch. The robotic voice is perfectly ‘retro-futurism’. The colors drive home the alien planet and the missions... need work. Let me explain what I mean. You start out with your squad, on a rescue mission, to rescue Bravo Team, armed with pew-pew pistolies and no extra bullets? While Bravo squad is armed with assault rifles? You soon run up against the planet’s native inhabitants, who are pretty resistant to your “defence pistols” and you are retreating faster than you advanced. There is also an enemy faction / rivals on the planet that you need to watch out for. It is just after you get pushed back by the bulletproof “Zerglings”, that you discover the planet also has “Hydralisks”. (I am using Starcraft terminology here as the unit names in the demo will have no meaning to our readers.) These “Hydralisks” do like 32 damage, and your units have 28 health, so if they get in range and spit acid, you have lost that unit. Just like in the UFO

series of games, the further you have to shoot, the less accurate you become. This creates tension (you have limited bullets) and the risk / reward mechanic comes into play. You do find other weapons, and you can see the Warhammer influence here with the chain sword that you find early on. You also have mechanical units, like robot sentries, etc.

While the game is very heavily retro-inspired, it does improve on some of the mechanics, but I would love to see rubber banding for selection, to move your squad all at once when there are no enemies nearby ('travel mode' as the game calls it). The game does feature some really satisfying "number go up" hit markers when you actually manage to shoot an enemy, and it is great.

If you are interested, go to itch.io, download the game, on the download page click: "just take me to the downloads", and try this game out! If you like it, I suggest buying it now while you can get away with paying $2 USD. I have a feeling this game will follow in the footsteps of keeper RL or Dwarf Fortress.

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Patrons

The current site was created thanks to **Lucas Westermann** (Mr. Command & Conquer) who took on the task of completely rebuilding the site, and scripts, from scratch, in his own time. The Patreon page is to help pay the domain and hosting fees. The yearly target was quickly reached thanks to those listed on this page. The money also helps with the new mailing list that I set up.

Several people have asked for a PayPal (single donation) option, so I 've added a button to the right side of the website.

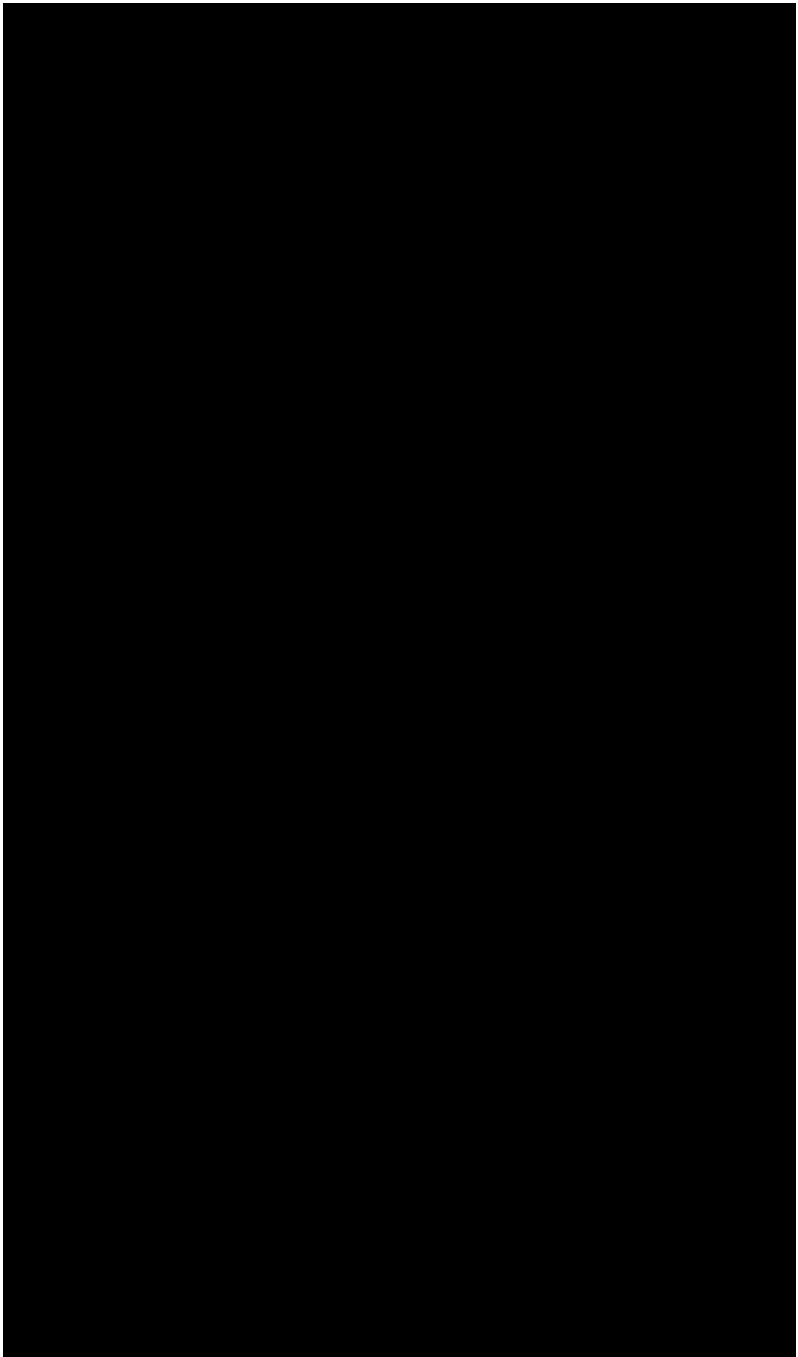
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